EM-265

DEFENSE ACQUISITION SYSTEM

An Executive Summary of DoDD 5000.1, DoDI 5000.2, and DoD Manual 5000.2

24 July 1991, Rev. 1

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Accession Number: 5378

Publication Date: Jul 24, 1991

Title: Defense Acquisition System. An Executive Summary of DODD 5000.1, DODI 5000.2, and DOD Manual 5000.2

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Abstract: The issuance of DODD 5000.1, DODD 5000.2, and DOD Manual 5000.2, all dated Feburary 23, 1991 represents a major change in the statement of DOD acquisition policies and procedures. Motivated by numerous acquisition initiatives that have resulted primarily from recent legislation and the Defense Management Report to the President, these documents consolidate and integrate acquisition policies, authorities, responsibilities, and procedures while further standardizing documentation formats. The principal thrust of these documents is the establishment of a disciplined approach for integrating the Department's requirements generation; acquisition management; and planning, programming, and budgeting systems.

Descriptors, Keywords: DoD acquisition policy procedure authority responsibility DODD 5000.1 DODD 5000.2 DOD Manual 5000.2 defense management report consolidation acquisition management planning program budget

Pages: 76

Cataloged Date: May 08, 1996

Document Type: HC

Number of Copies In Library: 000001

Original Source Number: EM-265

Record ID: 40697

FOREWORD

This manual is an Executive Summay of the three principal Department of Defense Acquisition System guidance documents. It is intended to provide top–level managers a quick–reference roadmap to the key elements contained in these documents. The information contained herein does not represent any official government position, nor does it critique the documents, but it is presented to capture the most important elements of the new documents. Interpretations are those of the authors and are intended to facilitate use of the new documents. It is assumed that the users of this guide are generally familiar with frequently used defense acquisition terminology.

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1. INTRODUCTION

The issuance of DoDD 5000.1, DODI 5000.2, and DoD Manual 5000.2, all dated February 23, 1991 represents a major change in the statement of DoD acquisition policies and procedures. Motivated by numerous acquisition initiatives that have resulted primarily from recent legislation and the Defense Management Report to the President, these documents consolidate and integrate acquisition policies, authorities, responsibilities, and procedures while further standardizing documentation formats. The principal thrust of these documents is the establishment of a disciplined approach for integrating the Department's requirements generation; acquisition management; and planning, programming, and budgeting systems. The approach requires:

- ***An integrated management framework*** for translating mission needs into stable, affordable programs that meet user needs and can be sustained within projected resource constraints
- ***An event–oriented management process*** for acquiring quality products that emphasizes acquisition planning, improved communications with users, and aggressive risk management
- ***A streamlined management structure*** with short, clearly defined lines of responsibility, authority, and accountability that promotes efficiency and effectiveness.

DoDD 5000.1, "Defense Acquisition," establishes the overall policies that govern defense acquisition, describes the integrated management framework, and summarizes the acquisition related responsibilities of key officials and forums that are set forth in individual DoD directives for each position and forum. DoDI 5000.2, "Defense Acquisition Management Policies and Procedures," establishes a core of fundamental policies and procedures that are intended for implementation by field operating commands and the Program Manager without supplementation. Included are policies and procedures for all major elements of the acquisition process such as requirements evolution, acquisition planning, risk management, engineering and manufacturing, program control and review, and the Defense Acquisition Board process. DoD Manual 5000.2, "Defense Acquisition Management Documentation and Reports," contains procedures and standardized formats to be used to prepare various milestone documentation, periodic status reports, and statutory certifications.

2. KEY HIGHLIGHTS

The issuance of these documents marks a significant change in both form and substance of DoD acquisition policy and procedure. In form, the documents represent a clear intent to centralize DoD acquisition policy—3 documents replace 65 DoD issuances—and to improve clarity of policy presentation through extensive use of graphics and examples—over 170 figures and tables are used in addition to numerous, completed sample documents. Substance is improved by integrating product and process: an integrated management framework that translates requirements into affordable and executable programs; an event-oriented process to manage program execution; and a streamlined organizational structure that promotes efficient and effective decisionmaking.

In addition, several other important features and/or changes from the previous versions of these documents should be highlighted.

DoDD 5000.1

- Applies to the management of major, nonmajor, and highly sensitive classified programs; supplementation is prohibited and component implementing directives must be kept to a minimum; effectivity is immediate
- Requires acquisition strategies to be event-driven and explicitly link major contractual commitments and milestone decisions to demonstrated accomplishments in development and testing
- Prohibits the use of fixed-price development contracts in excess of $10M without the prior approval of the USD(A)
- Requires the establishment of a dedicated acquisition corps managed in accordance with applicable law; PMs of major programs shall direct their programs for four years or until completion of a major milestone, and PEOs should have tenure of at least comparable duration
- Summarizes acquisition-related responsibilities of key officials that include:

DEPSECDEF approval of funding for major new start programs and all highly sensitive classified programs

Secretary of each Military Department designation of a full-time AE; selection of PEOs and establishment of a system for selecting PMs; and, establishment of a Department-level forum similar to the DAB

Component AE participation in the selection and evaluation of PEOs and PMs for major programs.

DoDI 5000.2

- Applies to the management of major, nonmajor, and highly sensitive classified programs; supplementation is prohibited and component implementing directives must be kept to a minimum; effectivity is immediate for planning purposes and programs scheduled for milestone reviews after August 23, 1991 are subject to the new procedures and documentation requirements

- Establishes Milestone I as the start of a new acquisition program

- Defines four acquisition categories (ACAT I-IV) into which all but highly sensitive classified programs shall be placed

- Requires the establishment of exit criteria (critical results to be attained during the next acquisition phase) at each milestone decision point

- Encourages program tailoring to minimize the time it takes to satisfy a need; but, establishes a set of core activities (establishing and documenting the threat and operational requirements, affordability, the acquisition strategy and baseline, cost and operational effectiveness, production readiness and supportability, and developmental and operational testing) that must be accomplished for every program

- Establishes that the policies and procedures in the instruction apply directly to ACAT I programs and are to be tailored for ACAT II, III and IV programs subject to approval of the milestone decision authority. The milestone decision authority may waive milestone documentation requirements, except those required by statute, for all programs

- Establishes that the DAB shall meet at each milestone and the USD(A) may hold special program reviews between milestone reviews. The DAB is supported by three committees (Strategic, Conventional, and C^3I Systems Committees) whose responsibilities are to: verify completion of exit criteria and minimum requirements of the preceding phase; provide an independent assessment of the program; and, to make recommendations on cost–schedule–performance trade–offs

- Requires that the PM give no more than three briefings during the process leading to the DAB: the documentation review, the DAB committee review, and the DAB review. The PM may be required to attend the CAIG and JROC reviews. The PM may attend the DAB planning meeting.

DoD MANUAL 5000.2

- Applies to the preparation of milestone documentation and periodic reports and certifications; supplementation is prohibited, but internal management processes required for implementation are permitted; effectivity is immediate for periodic reports and required certifications while milestone documentation formats first apply to programs scheduled for review after August 23, 1991

- Establishes two new documents: the Operational Requirements Document (ORD) which replaces similar Service documents (TOR, OR, SORD, and JSOR), and the Integrated Program Summary (IPS) which replaces the SCP and DCP. A companion document to the IPS is the Integrated Program Assessment (IPA) which follows the format of the IPS, without attachments, and is prepared by the DAB committee to provide a program assessment.

3. SYNOPSIS OF KEY ELEMENTS

The following paragraphs summarize key policy elements and procedures from each of the three documents. Statements are cross-referenced to the document by page number and paragraph such as:

page # para. #

(6 - H - 3 ; 4.a.)

3.1 DoDD 5000.1

This directive, entitled "Defense Acquisition" and included as Appendix A:

- Replaces DoDD 5000.1, "Major and Nonmajor Defense Acquisition Programs" dated September 1, 1987 and DoDD 4245.1, "Military Department Acquisition Management Officials" dated July 8, 1986
- Cancels 65 DoD issuances
- Establishes a disciplined management approach for acquiring systems based on the "Defense Management Report to the President," July 1989
- Applies to major, nonmajor, and highly sensitive classified programs
- Sets DoD acquisition policy and procedures except when statutory requirements override or FAR/DFARS requirements take precedence in contracting matters
- Governs defense acquisition by DoD Components through an integrated management framework that integrates the efforts and products of the Department's requirements generation, acquisition management, and planning, programming, and budgeting systems
- Prohibits supplementation except as prescribed by statute, authorized by DoDD 5000.1, or approved by the DEPSECDEF. Components shall ensure implementing documentation is kept to an absolute minimum. Waivers must be approved by the USD(A)
- Includes five "Parts" that are summarized in the following subparagraphs.

3.1.1 Part 1 — Policies Governing Defense Acquisition

Translating Operational Needs into Stable, Affordable Programs requires modernization and investment planning and affordability assessments. New programs must only be initiated after examining alternative ways of satisfying military needs; and, once started, such programs must strike a balance among cost, schedule, and performance.

- *Long Range Investment Plans* based on estimates of future topline resources shall be developed for each Component with programming and budgeting responsibilities and approved by the DEPSECDEF. The USD(A) shall perform long range investment area analyses. (1–1; B.1.)

- *Evolutionary Requirements Definition*. Mission needs shall be initially expressed in broad operational capability terms; be assessed to determine if they can be satisfied by nonmateriel solutions; be progressively evolved to system-specific requirements; and, be supported by validated intelligence threat assessments standardized and relatable to program baselines. (1–2; B.2.)

- *Acquisition Process–Milestones and Phases*. The acquisition process shall be structured in discrete phases separated by major decision points called milestones. Threat projections, life-cycle costs, cost–performance–schedule trade-offs, affordability, and risk management shall be considered at each milestone beginning with MS I. (1–2; B.3.)

- *Program New Starts*. Studies shall be conducted of alternative materiel concepts that satisfy a mission need prior to committing to a program new start. Funding shall be coordinated by the USD(A) and may come from reprogramming, budget amendments, or Component controlled study funds. Materiel alternatives must be considered in priority order:

    1. Use or modification of an existing U.S. military system
    2. Use or modification of a commercial or allied system
    3. A cooperative R&D program with the allies
    4. A joint–Service program
    5. A Service-unique program.

Funding for the initiation of a new program shall be approved by the DEPSECDEF or the Component Head based on cost thresholds. (1–2; B.4.)

Acquiring Quality Products requires effective planning and aggressive risk management.

- *Acquisition Strategies and Plans* shall be tailored to program objectives and to control risk. Strategies shall be event driven and explicitly link contractual commitments and milestone decisions to accomplishments. Planning must provide for a systems engineering approach to product design and associated manufacturing, test and support processes; and, make maximum practicable use of commercial item descriptions and non–Government standards, NDIs and commercial items. Solicitation and contract requirements also shall be streamlined. (1–4; C.1.)

- *Risk Management.* Program risks (threat, technology, technical, support, manufacturing, cost, and schedule including concurrency) and risk management plans shall be assessed at each milestone. Critical parameters driving cost, readiness, and capability must be identified early and managed intensively. Technology demonstrations and prototyping coupled with early operational assessments are to be used to reduce risk. Test and evaluation shall be used to determine system maturity and areas of technical risk. Solicitations shall require contractors to identify and mitigate risk. Schedule shall be subject to trade–off as a means of managing risk. (1–4; C.2.)

- *Contract Type Selection.* Fixed price development contracts for major systems/subsystems in excess of $10M shall not be used without prior approval by the USD(A). (1–5; C.3.)

- *Program Objectives and Baselines.* Broad cost, schedule, and performance objectives are to be established at MS I, refined, and included in subsequent program baselines. Design to average unit procurement cost objectives shall be established for all major and highly sensitive classified programs meeting the cost threshold for major defense acquisition programs. Performance objectives, developed with the user's participation, must satisfy operational needs and be verifiable by testing. (1–5; C.4.)

- *Competition and Source Selection.* Competition shall be used to the maximum extent practicable and be assessed in terms of feasibility, cost, and benefit at each milestone beginning at MS I. Contractor's past performance and current

capability shall be considered in source selection and responsibility determinations. (1–6; C.5.)

- ***Contractor Management Information*** and control systems including associated reports shall be used to the maximum extent possible. (1–6; C.6.)

Organizing for Efficiency and Effectiveness requires that short lines of responsibility and authority must be coupled with clear accountability and a well–trained and motivated work force.

- ***Short, Clear Lines of Authority and Accountability.*** Each component shall manage major and highly sensitive classified programs (meeting major program cost thresholds) through a chain of authority and accountability that extends from an AE through a PEO to the individual PM. PMs may report directly to the AE. Program direction including cost, schedule, performance and program funding must be issued by and flow through this chain. Personnel evaluations shall be rendered only within this chain. Acquisition Plan (AP) approval shall be delegated to the lowest level deemed practicable by the AE. PEOs shall receive separate allocation of funds and be delegated authority to approve below threshold reprogrammings. Personnel authorizations and funding for PEO and direct reporting PM offices shall be administered separately from the Military Department's systems, logistics, and materiel commands. A similar streamlined structure shall be established for nonmajor and highly sensitive classified programs (below the cost threshold for major programs). The roles of the Military Department's systems, logistics, and materiel commands shall focus on: essential logistics support, managing non–PEO assigned programs, and providing a variety of support services to PEOs and PMs, while duplicating none of their responsibilities or functions. (1–7; D.1.)

- ***Boards, Councils, Committees, and Staffs*** provide advice and assistance to those responsible for managing programs, and develop independent assessments of programs for decision authorities; however, they shall not issue programmatic direction or impede programs through the acquisition process. (1–8; D.2.)

- ***Independent Operational Test Activity.*** The Director of Operational Test and Evaluation (DOT&E) shall prescribe operational test and evaluation policies and procedures for DoD. Each Military Department and, as appropriate, Defense Agency shall establish an independent operational test activity. Acquisition managers shall not influence the objectivity and completeness of test results presented by the independent operational test activity. (1–8; D.3.)

- *Tenure of Key Officials.* Program Managers of major and highly sensitive classified programs (meeting the major program cost threshold) shall direct their programs for four years or until completion of a major milestone. PEOs should have at least comparable tenure. (1–9; D.4.)

- *Acquisition Corps.* A dedicated acquisition corps of civilian and military professionals shall be established and managed in accordance with applicable law. (1–9; D.5.)

3.1.2 Part 2 — Integrated Management Framework

This part describes the major characteristics of the Requirements Generation, Acquisition Management, and Planning, Programming, and Budgeting (PPB) systems. It does not establish policy, but does highlight the key interactions among the three systems within the integrated management framework. These interactions are graphically portrayed in Figure 3.1–1 and generally synopsized in the following bullets. [A detailed description of the requirements and acquisition systems may be found in DoDI 5000.2 (paragraph 3.2 herein) while the PPBS is addressed by DoDD 7045.14 and DoDI 7045.7]. (2–12; E.)

- Broad mission needs must be initially identified by the Requirements Generation System

- The Acquisition Management System must identify and assess alternative ways of satisfying these needs in light of current and projected technology development, producibility, industrial capability, and support infrastructure constraints

- Initial affordability decisions on proposed new acquisition programs must be made in the PPBS based on the Defense Planning Guidance, the approved long range investment plans, and overall funding constraints

- The initial, broad Mission Need Statement must be progressively translated into performance objectives, system–specific performance requirements, and a stable system design that can be efficiently produced

- Major cost–performance–schedule trade–offs must be made throughout the course of program implementation. They are based on validated threat assessments, the status of program execution, risk assessment, test results, and affordability constraints brought about by changes in topline fiscal guidance.

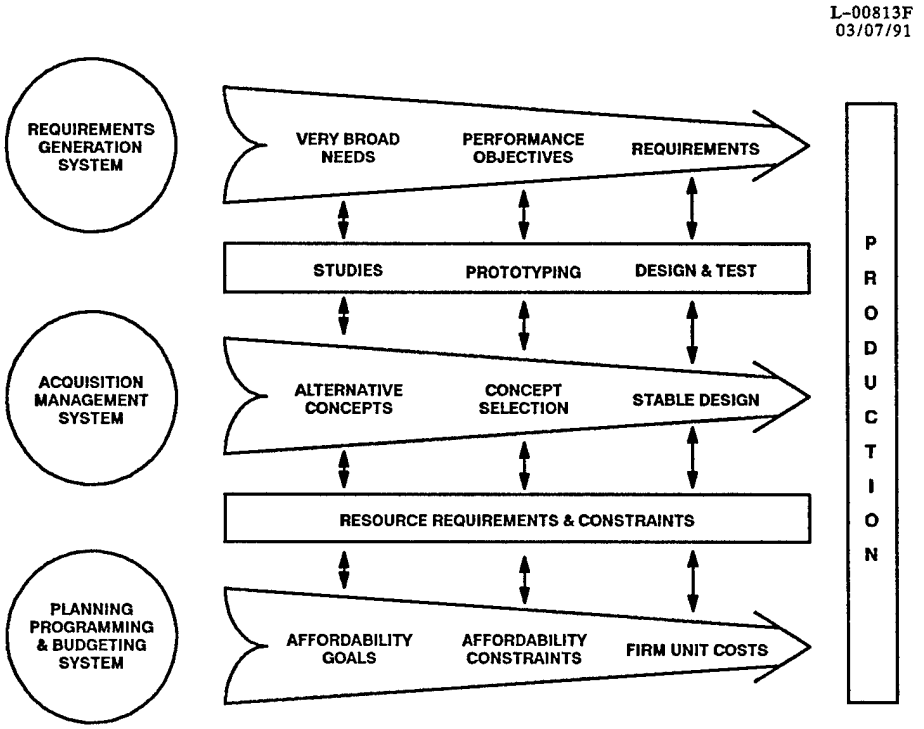

Figure 3.1–1 Key Interactions

3.1.3 Part 3 – Responsibilities

This part describes the significant acquisition related responsibilities of key officials and forums. It does not assign responsibilities or provide authorities which are set forth in the individual DoD directives for each position and forum.

DEPSECDEF

- Approves funding for major program new starts including highly sensitive classified programs meeting major program thresholds
- Provides general affordability guidance for these programs.

CJCS

- Establishes and publishes policies and procedures governing the Requirements Generation System.

USD(A)

- Exercises the responsibilities and authorities in DoDD 5134.1, "Under Secretary of Defense (Acquisition)," and DoDD 5000.49, "Defense Acquisition Board"
- Establishes and publishes acquisition management policies
- Prepares long-range investment area analyses
- Coordinates funding of concept development studies.

Secretary of Each Military Department

- Ensures implementation of policies and procedures
- Appoints a single, full-time AE
- Selects PEOs and establishes a system for selecting all PMs
- Charters a Department-level, DAB-like, review forum.

Other DoD Component Heads having acquisition responsibilities

- Appoint a single, full-time AE.

VCJCS

- Chairs the JROC
- Serves as Vice Chairman for the DAB
- Represents the Unified and Specified Commands on acquisition and requirements matters
- Serves on the Nuclear Weapons Council.

Chief of each Military Service

- Assists the CJCS in developing and ensuring the implementation of requirements generation policies and procedures.

DOT&E

- Prescribes OT&E policies and procedures
- Provides independent assessments and reports as required by statute.

Component AEs

- Have clear authority and responsibility for all acquisition functions within the Component
- Serve as the Senior Procurement Executive for executive agencies
- Serve as principal advisor to Component Head on acquisition matters including resource allocations
- Actively participate in evaluating PEOs and major program PMs.

PEOs and PMs

- Be accountable for managing assigned programs in accordance with DoDD 5000.1 and DoDI 5000.2.

ASD(PA&E) through the CAIG

- Provides independent cost estimates in support of the DAB review process
- Performs the responsibilities established in DoDD 5000.4, "OSD Cost Analysis Improvement Group."

3.1.4 Part 4 – References

3.1.5 Part 5 – Cancellations

3.2 DoDI 5000.2

This instruction, "Defense Acquisition Management Policies and Procedures," is the largest of the three documents. It contains 16 parts, summarized in paragraphs 3.2.1 through 3.2.16, and an introductory section that addresses:

- *Purpose*—To establish an integrated management framework of three major decisionmaking systems (Requirements Generation System, Acquisition Management System, and the PPBS) and an event-oriented management process
- *Applicability*—To define the Instruction's coverage of major, nonmajor, and highly sensitive classified programs [unless specifically stated otherwise]
- *Precedence*—To recognize FAR/DFARS precedence over DoD 5000.1 and DoDI 5000.2 in regard to contracting matters
- *Supplementation*—To prohibit supplementation without prior approval of the USD(A), unless prescribed by statute or the Instruction, and, to minimize implementing documents
- *Effectivity*—To require immediate effectivity for planning purposes; and, to make all acquisition programs scheduled for milestone reviews after August 23, 1991 subject to the new procedures and documentation requirements in the Instruction.

3.2.1 Part 1 — Background and Table of Contents

DoD acquisition managment policies and procedures have traditionally been published in numerous separate directives and instructions. Since these documents were typically supplemented by the DoD Components, this practice resulted in a heavily cross-referenced maze of guidance. This Instruction seeks to remedy that problem by establishing a core of fundamental policies and procedures that can be implemented down to the PM and field operating command level without supplementation.

3.2.2 Part 2 – General Policies and Procedures

- *Acquisition Milestones* and *Phases* are changed as shown in Figure 3.2–1. Note that program start is defined as occurring no earlier than MS I. (2–1; B.1.)

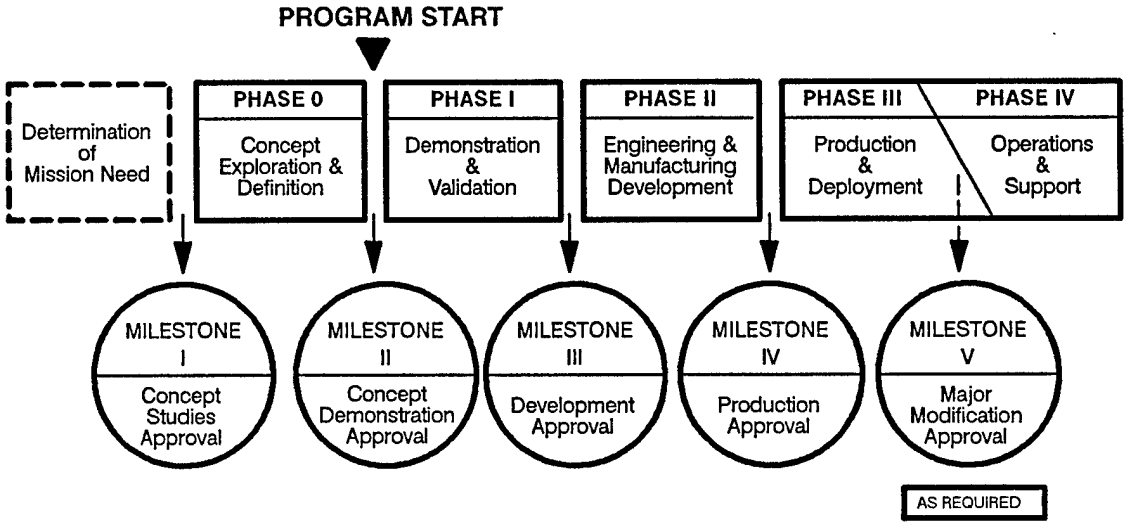

Figure 3.2–1 Acquisition Milestones and Phases

- *Acquisition Categories* are defined as shown in Table 3.2–1. (2–2; B.2.)

Table 3.2–1 Acquisition Categories (ACATs)

ACAT	SELECTION CRITERIA	DESIGNATION AUTHORITY	MILESTONE DECISION AUTHORITY
I	Not classified as highly sensitive by SECDEF that are: Designated ACAT I by USD(A), or Estimated by USD(A) to require: > $200M RDT&E (FY80 $s); or > $1B Proc (FY80 $s)	USD(A)	ACAT ID (Department): USD(A) ACAT IC (Component): HoC or, if delegated AE
II	Do not meet ACAT I criteria and are: Designated ACAT II by HoC, or Estimated by HoC to require: > $75M RDT&E (FY80 $s); or > $300M Proc (FY80 $s)	Head of Component (HoC) or, if delegated, AE	HoC or, if delegated, AE
III	Do not meet ACAT I and II criteria and are designated ACAT III by AE	AE	Lowest level deemed appropriate by AE
IV	All other acquisition programs	AE	Lowest level deemed appropriate by AE

- *Acquisition Strategies, Exit Criteria, and Risk*. Acquisition strategies and associated contracting activities must explicitly link milestone decisions to events and demonstrated accomplishments. Milestone decisions shall address program status, plans for the next phase and remainder of program, and program risk and risk management. Milestone decisions shall establish the critical results, called exit criteria, that must be achieved during the next phase. (2–4; B.3.)

- *Total System Management*. Programs shall be managed to optimize the total system (prime mission equipment, user, logistics, and other support elements) performance and reduce ownership costs. (2–5; B.4.)

- *Tailoring*. A primary goal is to minimize the time it takes to satisfy the need. The number of phases and decision points, the formality of reviews and documentation, and the need for other supporting activities shall be tailored to meet the needs of individual programs. However, all programs must accomplish certain core activities that establish and document the threat, operational requirements, affordability, the acquisition strategy, program baseline, cost and operational effectiveness, production readiness and supportability, and development and operational testing. Tailoring shall focus on ***how*** these activities are conducted. (2–6; B.5.)

- *Staffs and the Milestone Review Process*. Higher level staffs provide advice/assistance to the PM and an independent assessment to the decision authority with respect to the program's readiness to proceed and the adequacy of the proposed approach; however, programmatic direction shall only be issued by persons within the chain of authority. (2–6; B.6.)

- *Milestone Review Documentation and Periodic Reports* are addressed in detail in DoD Manual 5000.2, (paragraph 3.3 herein). (2–7; C.1.)

- *Formal Solicitations* may not be released until the decision authority has approved the Acquisition Strategy Report (ASR). For MS I, this occurs concurrently with approval of the Acquisition Decision Memorandum (ADM). For MS II, this occurs ***prior*** to the MS II review. For MS III, ASR approval is only required if a revision to the MS II ASR is needed. (2–8; C.2.)

- *Tailoring of Procedures and Documentation*. The policies and procedures described in this instruction apply directly to ACAT I programs and will be tailored as defined above for ACAT II, III, and IV programs suject to the approval of the milestone decision authority. (2–9; 3.)

- *Highly Sensitive Classified Programs* shall comply with DoDI 5000.2 for the equivalent dollar value ACAT, subject to the tailoring described above. The milestone decision authority may waive milestone documentation requirements, except those required by statute. The only periodic reports required are program deviation reports and those explicitly imposed by the milestone decision authority. (2–10; 4.)

3.2.3 Part 3 — Acquisition Process and Procedures

- *Mission Need Statement (MNS)* flow is shown in Figure 3.2–2. Initial ACAT determination is made by the MNS originator. (3–2; 2.)

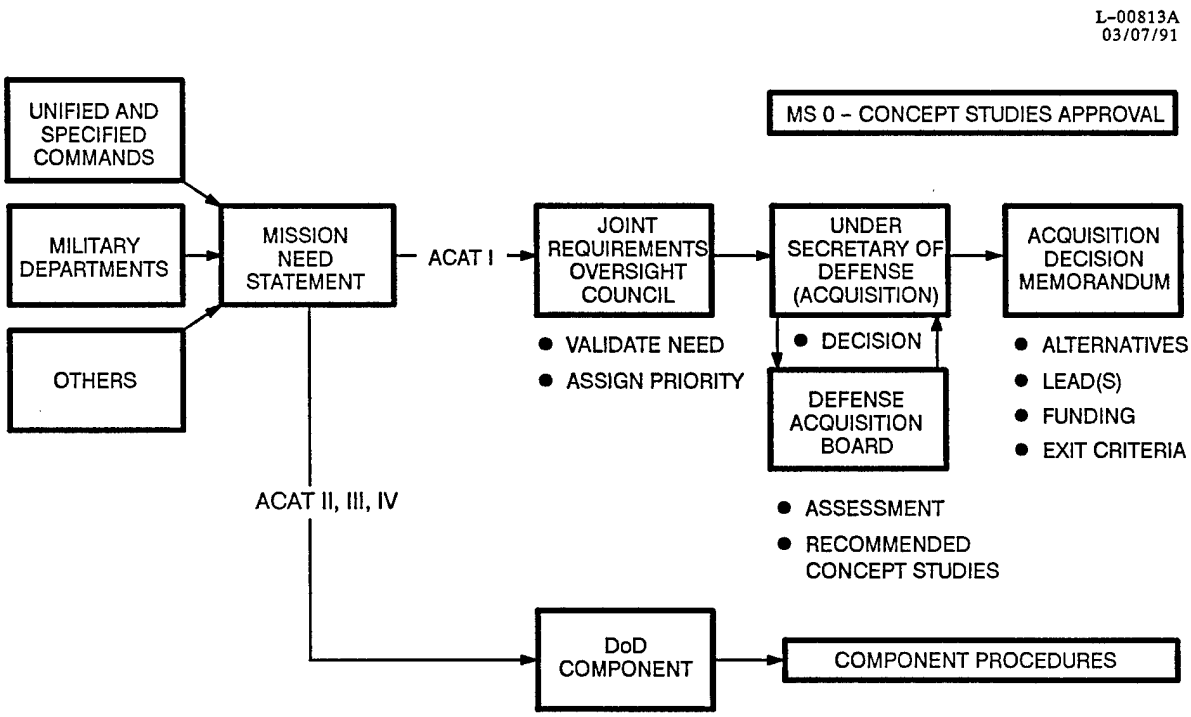

Figure 3.2–2 Mission Need Statement Flow

- *Acquisition Milestones and Phases*. Tables 3.2–2 through 3.2–11 summarize key descriptors for each milestone and phase of the acquisition process. (3–4; 3.)

Table 3.2–2 Milestone 0 — Concept Studies Approval

OBJECTIVES
• Determine if mission need warrants initiation of study efforts, and • Identify minimum set of alternative concepts to be studied.
DECISION CRITERIA
Entry into Phase 0 may not be approved unless decision authority determines that mission need: • Is based on a validated projected threat • Cannot be satisfied by a nonmateriel solution, and • Is sufficiently important to warrant funding efforts to develop alternative concepts.
ACQUISITION DECISION MEMORANDUM
The ADM for this decision point should: • Define minimum set of alternative concepts to be examined • Identify lead organization(s) for study efforts • Establish exit criteria that must be met at Milestone I, and • Identify amount and source of funding for study efforts.

Table 3.2–3 Phase 0 — Concept Exploration and Definition

OBJECTIVES
• Explore various materiel alternatives to satisfying mission need • Define most promising system concept(s) • Develop supporting information including risk areas and risk management approaches, and • Develop acquisition strategy(s) and program cost, schedule, and performance objectives for most promising concept(s).
MINIMUM REQUIRED ACCOMPLISHMENTS
• A validated system threat assessment • Assessments of major pros and cons of each alternative • Acquisition strategy(s) for most promising alternative(s) that addresses: Key system characteristics and operational constraints Cost, schedule, and performance trade-off opportunities Cost, schedule, and performance objectives, and Risks associated with each concept and risk management approach • Identification of potential environmental consequences, and • Proposed program-specific exit criteria for Phase I.

Table 3.2–4 Milestone I — Concept Demonstration Approval

OBJECTIVES
• Determine if results of Phase 0 warrant establishing a new acquisition program, and • Establish baseline containing initial program cost, schedule, and performance objectives.
DECISION CRITERIA
A new program may not be established unless decision authority confirms that: • System threat assessment, performance objectives, and thresholds have been validated • Study efforts support need for a new program, • Environmental effects of most promising alternative are analyzed and mitigation measures identified • Life-cycle costs and annual funding requirements are affordable, and • Adequate resources (people and funds) to support program are, or can be, programmed.
ACQUISITION DECISION MEMORANDUM
The ADM for this decision point should: • Approve initiation of a new program and entry into Phase I • Approve acquisition strategy and baseline, • Establish program-specific exit criteria for Phase I, and • Identify affordability constraints.

Table 3.2–5 Phase I — Demonstration and Validation

OBJECTIVES
• Define critical design characteristics and expected capabilities of system concept(s) • Demonstrate critical technologies can be incorporated into system design(s) with confidence • Prove critical processes to most promising system concept(s) are understood and attainable • Develop information needed to support Milestone II decision, and • Establish baseline cost, schedule, and performance objectives for most promising design.
MINIMUM REQUIRED ACCOMPLISHMENTS
• A validated system threat assessment • Identification of major cost, schedule, and performance trade-offs • A baseline including cost, schedule, and performance objectives • Development test results that assess risk of new or emerging technologies • A refined acquisition strategy that identifies: High risk areas and the risk management approach Low-rate initial production quantities, if appropriate • An assessment of the defense industrial base capability to support the program • Identification of environmental effects and identification of appropriate mitigation measures • An updated assessment showing life-cycle costs and annual funding requirements are affordable • Programming of adequate resources to support Phase II, and • Proposed program-specific exit criteria for Phase II.

Table 3.2–6 Milestone II — Development Approval

OBJECTIVES
• Determine if the results of Phase I warrant continuation, and • Establish baseline containing refined program cost, schedule, and performance objectives.
DECISION CRITERIA
A program may not enter Phase II unless decision authority confirms that: • System threat assessment performance objectives, and thresholds have been validated • Prototyping and demonstration results provide reasonable assurance that technologies and processes critical to success are attainable • Environmental effects are analyzed and appropriate mitigation measures identified • Life-cycle costs and annual funding requirements are affordable, and • Adequate resources (people and funds) have been, or are committed to be, programmed.
ACQUISITION DECISION MEMORANDUM
The ADM for this decision point should: • Approve entry into Phase II • Approve acquisition strategy and baseline • Establish program-specific exit criteria for Phase II, and • Identify low-rate initial production quantities, if appropriate.

Table 3.2–7 Phase II — Engineering and Manufacturing Development

OBJECTIVES
• Translate most promising design into a stable, producible and cost-effective system design • Validate manufacturing or production process, and • Demonstrate through testing that system capabilities: Meet contract specification requirements, and Satisfy mission need and minimum acceptable operational performance requirements.
MINIMUM REQUIRED ACCOMPLISHMENTS
• A validated system threat assessment • Test results that provide a realistic portrait of performance under operational conditions, • Low-rate initial production experience that: Verifies adequacy of manufacturing or production process, Confirms stability and producibility of the design, and Provides a realistic estimate of production costs • A refined acquisition strategy and system cost estimate • A baseline that includes refined program cost, schedule, and performance objectives • A system configuration baseline • Identification of environmental effects and development of appropriate mitigation measures • An updated assessment showing life-cycle costs and annual funding requirements are affordable • Programming of adequate resources to support production, deployment, and support.

Table 3.2–8 Milestone III — Production Approval

OBJECTIVES
• Determine if results of Phase II warrant continuation, and • Establish a baseline containing refined program cost, schedule, and performance objectives.
DECISION CRITERIA
A program may not enter full rate production (or ship/satellite construction) unless decision authority confirms that: • System threat assessment, performance objectives, and thresholds have been validated • Test results and low-rate initial production provide reasonable assurance that the design is: Stable, operationally acceptable, logistically supportable, and Capable of being produced efficiently • Environmental effects are analyzed and appropriate mitigation measures developed • Life-cycle costs and annual funding requirements are affordable, and • Adequate resources to support production, deployment, and support are programmed.
ACQUISITION DECISION MEMORANDUM
The ADM for this decision point should: • Approve entry into Phase III • Approve acquisition strategy and baseline, and • Establish program-specific exit criteria for Phase III, if appropriate.

Table 3.2–9 Phase III — Production and Deployment

OBJECTIVES
• Establish a stable, efficient production and support base • Achieve an operational capability that satisfies the mission need, and • Conduct follow-on operational and production verification testing.
MINIMUM REQUIRED ACCOMPLISHMENTS
• Updated configuration baseline(s) • Updated and validated system threat assessment(s) • Refined cost information • Execution of operational and support plans, and • Identification of operational and/or support problems.

Table 3.2–10 Milestone IV — Major Modification Approval

OBJECTIVES
• Determine if major upgrades to a system currently in production are warranted, and • Establish an approved acquisition strategy and baseline. **NOTE:** This milestone is scheduled as required during Phase III When a system is no longer in production, correction of a system deficiency requires a new MNS Intent is that modifications compete with all other possible alternatives
DECISION CRITERIA
A modification program may not be established unless decision authority confirms that: • System threat assessment, performance objectives, and thresholds have been validated • Field experience and results support need for such a program • Assurance exists that critical technologies and processes are identified and attainable • Environmental effects are analyzed and appropriate mitigation measures identified • Life-cycle costs and annual funding requirements are affordable, and • Adequate resources have been, or are committed to be, programmed.
ACQUISITION DECISION MEMORANDUM
The ADM for this decision point should: • Define the phase of the process the program is approved to enter, • Approve acquisition strategy and baseline, and • Establish program-specific exit criteria that must be accomplished.

Table 3.2–11 Phase IV — Operations and Support

OBJECTIVES
• Ensure the fielded system continues to provide capabilities required, and • Identify shortcomings or deficiencies that must be corrected to improve performance.
MINIMUM REQUIRED ACCOMPLISHMENTS
• Updated configuration baseline(s) • Attainment and maintenance of required performance characteristics and capabilities, and • Conduct of service life extension programs, as appropriate.

3.2.4 Part 4 – Requirements Evolution and Affordability

- ***Intelligence Support*** includes preparation and validation of threat and threat risk information, and the assessment of projected life-cycle costs of intelligence support. Mission needs and resultant acquisition programs shall be based on current, authoritative threat information. Initial system threat assessments shall be prepared for MS I and maintained in a current, approved/validated status throughout the acquisition process. Intelligence support of threat assessments/employment of systems shall be identified early and included in program plans and cost estimates. (4-A-1; 1., 2.)

- ***Mission Need Statements*** (MNS) shall document deficiencies in broad operational terms which shall be used as a basis for subsequent definition of system performance objectives and minimum requirements. These objectives and requirements shall be documented by the user, beginning at MS I, in an Operational Requirements Document (ORD). The ORD shall be progressively refined and become more detailed at successive milestones. Key performance parameters also shall be included in acquisition program baselines that shall be validated by an operational authority other than the user prior to each milestone review. MNS and ORD formats shall be uniform across the DoD Components and apply to all ACATs. (4-B-1; 2.)

- ***System Characteristics Critical*** to system operation and support shall be identified early, addressed in cost-schedule-performance trade-offs, and assessed in terms of cost and risk prior to MS II. At MS II, the decision authority shall make the final determination as to which critical characteristics shall be included in the system design. Critical characteristics thresholds and objectives shall be documented in the ORD and ***selected*** critical system characteristics shall be included in the program baseline. (4-C-1; 2.)

- ***Affordability*** constraints shall be established at MS I and assessed at each subsequent milestone. Programs shall not be approved to enter the next phase unless sufficient resources have been or will be programmed. (4-D-1; 2.)

- ***Cost and Operational Effectiveness Analyses*** (COEAs) shall be prepared for ACAT I programs and considered at milestone reviews beginning at MS I. For other than ACAT Is, COEA principles shall be tailored and implemented as deemed appropriate by the Component AE. (4-E-1; 2.)

3.2.5 Part 5 — Acquisition Planning and Risk Management

- *Acquisition Strategies* shall be developed to minimize the time and cost of satisfying validated needs. As such, acquisition strategies shall be tailored to meet the specific needs of individual programs and shall evolve through an iterative process so that they become increasingly more definitive in describing the essential elements of a program. (5–A–1; 2.)

- *A Risk Management Program*, including industry participation, shall be established for each program to identify and control performance, cost, and schedule risks throughout the acquisition cycle. (5–B–1; 2.)

- *Technology Development and Demonstration*. The USD(A) and the Components shall provide a coordinated, overall picture of DoD technology efforts, establish technology goals and dedicate the resources to support these goals, and coordinate technical efforts across all Components. The Components shall establish technology development programs, independent from acquisition programs, and conduct technology demonstrations of innovative Government or commercially developed technologies. (5–C–1; 2.)

- *Technology Transition and Prototyping*. Acquisition strategies shall include plans for assessing and utilizing critical technologies from technology development programs. Prototyping of critical manufacturing processes and hardware/software systems and subsystems shall be conducted during Phase I. (5–D–1; 2.)

- *Industrial Base* implications of acquisition programs shall be assessed at each milestone. Program planning shall minimize the impact of foreign dependencies and diminishing manufacturing sources and material shortages on production and support. (5–E–1; 2.)

- *A Protection and Technology Control Program* shall be established for each acquisition to identify and protect classified and other sensitive information. (5–F–2; 2.)

3.2.6 Part 6 — Engineering and Manufacturing

- *Systems Engineering* shall be applied throughout the life–cycle to place equal emphasis on system capabilities, and manufacturing, test, and support processes. Primarily, the Government shall manage and the contractor shall execute the systems engineering process. (6–A–1; 2.)

- *A Work Breakdown Structure* that defines the total system, displays it as a product oriented family tree, and relates elements of work to each other and to the end product shall be developed for each program and contract within the program. (6–B–1; 2.)

- *Reliable and Maintainable* systems are achieved through a disciplined engineering process that shall: emphasize understanding of the user's system readiness and mission performance requirements, physical environments, and available support resources; manage the contributions to system reliability and maintainability; prevent design deficiencies, preclude selection of unsuitable parts and materials, and minimize manufacturing process variability; and develop robust systems, insensitive to the system's life–cycle environments and easily repaired under adverse conditions. Failure detection and correction are to be used to mature good designs – not fix poor designs. (6–C–1; 2.)

- *Computer Resources* that are: physically part of, dedicated to, or essential to mission performance of systems; used for specialized training, simulation, diagnostic test and maintenance, or calibration of systems; or used for system R&D, shall be acquired and managed per DoDD 5000.1. Other computer resources shall be acquired per DoDD 7920.1. (6–D–1; 1, 2.)

- *Transportability* engineering shall identify the limiting characteristics of transportation systems and integrate that data into equipment design. Transportability shall be a major consideration in formulating the priority of system design characteristics, modifying existing cargo vehicles and handling/transportation equipment, and developing ILS. (6–E–1; 2.)

- *Survivability* from all threats found in the various levels of conflict shall be an essential consideration during program acquisition. (6–F–2; 2.)

- *Electromagnetic Compatibility and Radio Frequency Management.* All electric or electronic systems shall be designed to operate in all intended environments without creating or suffering from undue electromagnetic interference. Intentional radiators of radio frequency energy shall comply with DoD, national, and applicable international radio frequency management policies. (6–G–1; 2.)

- *Human Factors* engineering shall be an integral part of program planning. Design requirements shall ensure effective man–machine interfaces and preclude system characteristics which: require extensive cognitive, physical or

sensory skills; require complex manpower or training intensive tasks; or result in frequent or critical errors. (6–H–1; 2.)

- ***System Safety, Health Hazards, and Environment.*** Engineering principles shall be applied to identify and reduce system operation and support hazards to yield the safest possible systems consistent with mission requirements and cost effectiveness. Decisions to accept the risks associated with an identified hazard shall be formally documented. Systems shall be analyzed for their environmental impacts. (6–I–1; 2.)

- ***A System Security*** engineering management program that identifies, evaluates, and eliminates or contains system vulnerabilities to known or postulated security threats shall be established for each program. Engineering principles shall be applied to identify and reduce system susceptibility to damage, compromise, or destruction. (6–J–1; 2.)

- ***Design to Cost (DTC).*** A design to average unit procurement cost objective shall be established for ACAT I programs (others at the discretion of the decision authority) beginning at MS I and subsequently refined at successive milestones. Initial DTC activity shall focus on identifying cost drivers, potential risk areas that may become cost drivers, and cost–schedule–performance trade–offs. Subsequent efforts shall focus on identifying and applying cost reduction techniques to areas of excessive costs. (6–K–1; 2.)

- ***Nondevelopmental Items*** (NDIs) shall be used to the maximum extent practicable to satisfy material requirements when such products will meet the user's needs and are cost effective over the entire life–cycle. (6–L–2; 3.)

- ***The Metric System of Measurement*** shall be used by all DoD activities, including all elements of defense systems requiring new design. (6–M–1; 2.)

- ***Computer Aided Acquisition and Logistics Support*** (CALS). Preference shall be given to contractor information services and online access instead of data deliverables. When delivery is required, digital form shall be preferred to paper, wherever feasible. (6–N–1; 2.)

- ***Design for Manufacturing and Production.*** Producibility of the product design shall be a priority. Production engineering and producibility efforts shall begin at MS I and focus on simplifying the design and stabilizing the manufacturing process. Rigorous assessment of product design and manufacturing process

risks and application of risk reduction measures shall be performed throughout all program phases beginning at MS I. Full rate production will not be approved until the product design is stabilized, manufacturing processes are proven, and rate production facilities, equipment, capability, and capacity are in place (or being put in place). Value engineering concepts shall be used and contractor past performance in production engineering, producibility, and quality history shall be considered in solicitations and source selection. (6–O–2; 2.)

- *Quality* of design, conformance, and fitness for use shall be emphasized and integrated throughout all elements of the program. The source selection process shall place emphasis on contractor past factory and fielded quality performance as a key selection criteria. (6–P–1; 2.)

- *DoD Standards* shall be applied to provide a means for clear communication and to document accepted practices and proven material; however, standards shall not be used as a substitute for solid engineering effort seeking the best design for the particular system. Materiel requirements shall be stated in terms of required function, performance, or physical characteristics. Application of standards shall satisfy program objectives and be consistent with the principles of streamlining. (6–Q–2; 2.)

- *A Parts Control Program* shall be established in each program at the beginning of Phase II, or Phase I if this can be expected to yield appreciable cost savings. (6–R–1; 2.)

3.2.7 Part 7 – Logistics and Other Infrastructure

- *An Integrated Logistics Support* effort shall be established within each program office, including post–production support planning and the following 10 ILS elements: maintenance planning; manpower and personnel; supply support; technical data; training and training support; computer resources support; facilities; packaging, handling, storage, and transportation; and design interface. (7–A–1; 2.)

- *Human Systems Integration*, as depicted in Figure 3.2–3, shall be a part of the system design. Objectives for the human element of the system shall be initially established at MS I and subsequently refined at successive milestones. (7–B–1; 2.)

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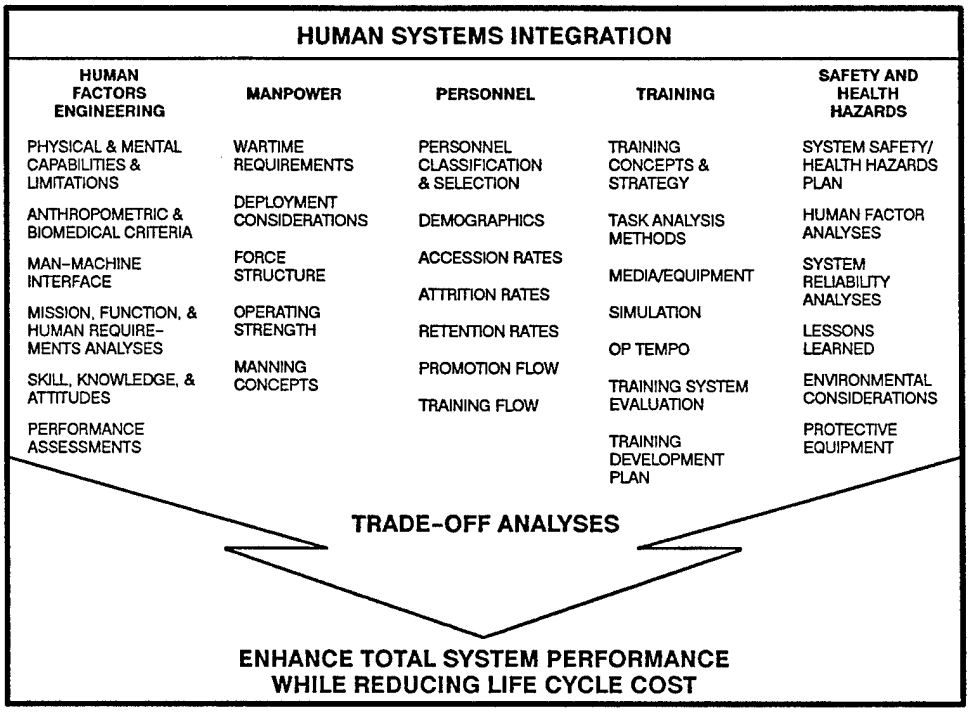


Figure 3.2–3 Human Systems Integration

- *Infrastructure Support.* Each system shall be assessed for its interaction with and integration into the C^3I structure, including compatibility and interoperability, frequency spectrum utilization, and intelligence support. In addition, each system shall identify other infrastructure support it requires such as: mapping, charting and geodesy; precise time and time interval; national environmental; standardization and interoperability; host nation approval; and connection approval. The availability and cost of infrastructure support will be addressed at each milestones. (7–C–1; 2., 3.)

3.2.8 Part 8 – Test and Evaluation

- *Test and Evaluation* (T&E) shall support decisionmaking by providing information for: assessment of acquisition risk, verification of technical performance specifications, and verification of operational effectiveness and suitability. (8–2; 2.)

- *Development T&E* shall: identify technical and operational limitations of alternative concepts and designs; support cost–performance trade–offs; support identification of design risks; substantiate achievement of contract technical performance and manufacturing process requirements; and support system certification for operational T&E. (8–4; 3.)

- *Live Fire T&E* must be conducted unless a waiver is approved. Production qualification T&E shall be completed prior to the full–rate production decision. (8–4; 3.)

- *Operational T&E* shall be structured to determine operational effectiveness and suitability under realistic combat conditions and verify that minimum acceptable requirements in the ORD have been satisfied. (8–5; 4.)

3.2.9 Part 9 – Configuration and Data Management

- *Configuration Management* (CM) shall: identify and document the functional and physical characteristics of a configuration item (CI); control changes to a CI and its documentation; record and track the configuration status of each CI; and, audit actual versus documented CI functional and physical characteristics. CM shall be applied to any item: developed wholly or partially with Government funds, including NDIs that require development of technical data, or designated for CM for reason of integration, logistics support, or interface control. (9–A–1; 2.)

- *Technical Data* is recorded information (regardless of form or method of recording) of a scientific or technical nature (including computer software documentation) relating to supplies procured by an agency. It does not include computer software or financial, administrative, cost or pricing, or management data, or other information incidental to contract administration. The Component responsible for an item shall ensure that the Government has complete access to the data necessary to support the essential requirements of all users throughout the item's life–cycle. (9–B–2; 2.)

3.2.10 Part 10 – Business Management and Contracts

- *Cost Estimates* shall be prepared in support of MS I and all subsequent milestones. Estimates shall be based on program objectives, operational

requirements, and contract specifications and be comprehensive and realistic (neither optimistic nor pessimistic). Two estimates will be prepared: one by the program office and the other by an organization outside the acquisition chain (for joint programs the latter estimate shall be prepared by an organization designated by the decision authority). As warranted by the issues involved, cost estimates may be required at program reviews. (10–A–1; 2., 3.)

- *Selection of Contractual Sources.* Component heads responsible for ACAT I or II programs shall be the Source Selection Authority (SSA), with power of delegation. SSAs shall ensure that: (1) the Source Selection Plan (SSP) and evaluation factors are consistent with the solicitation, DoD 5000.1, and DoDI 5000.2; (2) people with the requisite skills and experience are appointed to the SSAC and SSEB; (3) conflicts of interest, or appearance thereof, are avoided; (4) premature and unauthorized disclosure of source selection information is avoided; (5) the USD(A) is informed of selection results prior to public announcement; and (6) supporting rationale for selection is documented before contract award is announced. The SSEB shall report findings to the SSAC (if appointed by the SSA) or directly to the SSA. The PM shall develop and implement the acquisition strategy, prepare the SSP, and obtain SSA approval of the SSP before issuance of the solicitation. The PCO shall prepare solicitations consistent with the FAR/DFAR and communicate with offerors. Persons other than the PCO, participating in the evaluation, shall avoid contact with offerors once the selection process starts. Independent evaluators may require access to proposal information, but are bound by the same conflict of interest rules as members of the source selection organization. (10–B–1; 2.)

- *Acquisition Streamlining.* All acquisitions shall be streamlined and contain only those requirements (stated in terms of performance rather than "how to") and data which are essential and cost–effective. Design solutions and specifications, standards, and related documents shall not be applied prematurely. Acquisition process requirements not prescribed by law, the FAR or its supplements, shall be tailored to meet the specific needs of individual programs. NDIs shall be used to meet acquisition requirements wherever possible. Early industry involvement in the acquisition effort shall be encouraged to improve the acquisition strategy. (10–C–1; 2.)

3.2.11 Part 11 – Program Control and Review

- ***Program Baselines***, approved by the decision authority, and deviation reporting are required for all programs (formality will vary by ACAT). Each baseline shall contain objectives and thresholds (minimum acceptable requirements) for key cost, schedule, and performance parameters. Key parameters are those that, if the thresholds are not met, the decision authority would require a reevaluation of alternative concepts. The PM shall maintain a current estimate of each key parameter so that breaches (parameter values falling below threshold levels) may be identified and reported. Once signed by the decision authority, baselines shall only be changed at subsequent milestones or program reviews with decision authority approval. Components may supplement baselines with an assessment structure to measure PM performance relative to the directed program. (11–A–1; 2.)

- ***Contract Performance Measurement.*** Unless waived, compliance with the C/SCSC set forth in DoDI 5000.2 shall be required on significant contracts (RDT&E $60M; Proc $250M) and subcontracts, including sensitive classified and construction programs. C/SCSC compliance is not required on: firm fixed price, time and materials, and mostly level-of-effort contracts. Contracts other than these that are determined to be not significant enough for C/SCSC application, shall require the C/SSR. (11–B–2; 2.)

- ***Milestone Review Procedures and Documentation.*** Review of a program's progress by the decision authority shall, as a minimum, occur at MS I through MS IV. Documentation, limited to that required to support the purpose of the review and to that required by statute, is the primary means for the functional staff and PM to provide the decision authority with the information needed to make a milestone decision. The scope and formality of this documentation will vary depending upon the program's ACAT. However, the formats prescribed in DoD Manual 5000.2 must be used for ACAT I programs and ACAT II, III and IV programs subject to a particular statutory document. For ACAT II, III and IV programs not subject to a particular document by statute, the prescribed formats may be used at the discretion of the DoD Components. Figure 3.2–4 summarizes milestone documentation. (11–C–1; 2.)

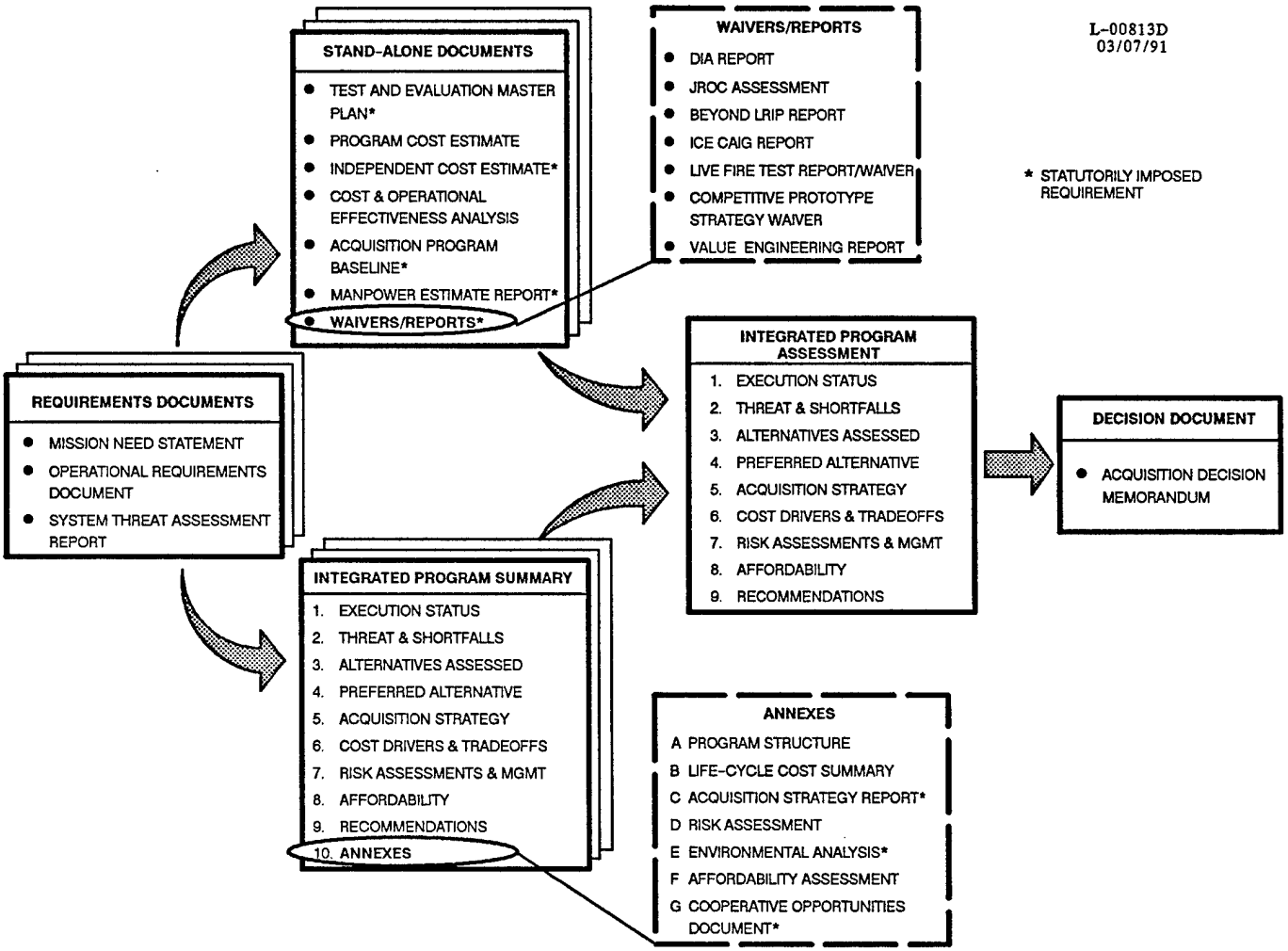


Figure 3.2–4 Milestone Documentation

- ***Periodic Program Status Reports and Required Certifications.*** Program status reporting, designed to provide the decision authority with adequate information to oversee the program, shall be based on management–by–exception and be limited to those reports required by statute and DoDI 5000.2. The scope and formality of reporting requirements will vary depending upon the program's ACAT. However, the formats prescribed in DoD Manual 5000.2 must be used for ACAT I programs and ACAT II, III and IV programs subject to a particular statutory report or certification. For ACAT II, III and IV programs not subject to particular statutory report or certification, the prescribed formats may be used at the discretion of the DoD components. Figure 3.2–5 summarizes periodic reports and certifications. (11–D–1; 2., 3.)

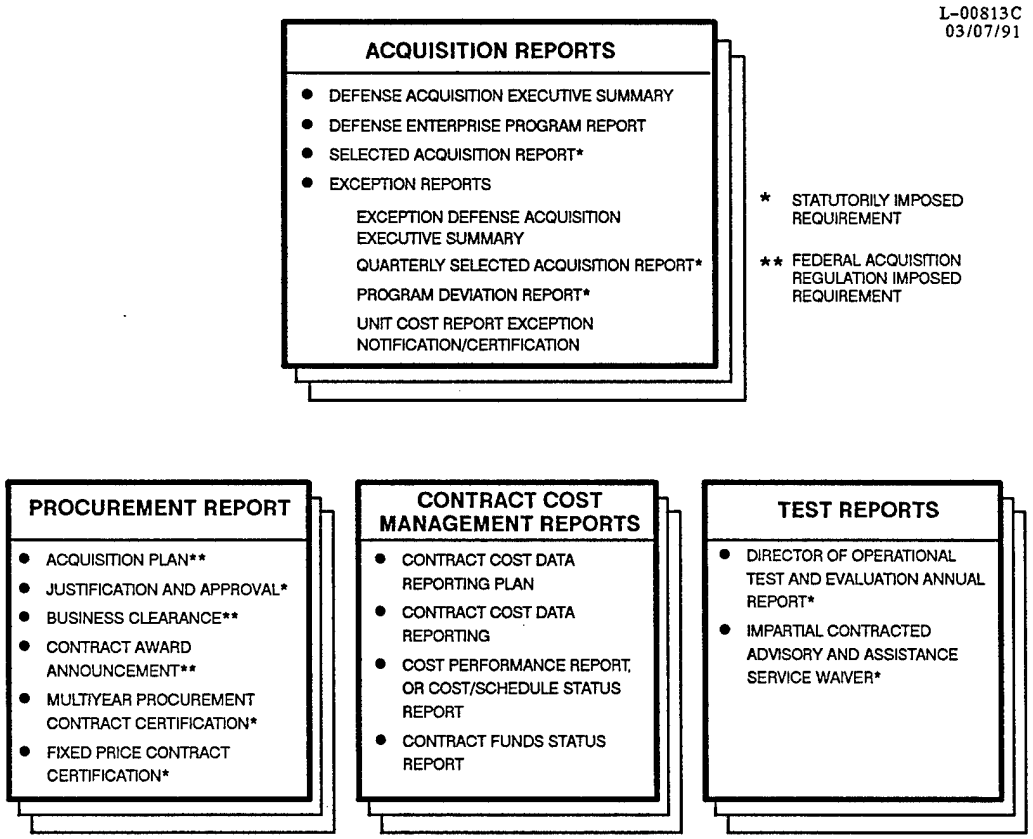


Figure 3.2–5 Periodic Reports and Certifications

- ***Program Plans*** belong to the PM and are to be used to guide execution of the program. Approval shall be delegated by the AEs to the lowest practicable level. Scope and formality will vary by ACAT. Format will be specified by DoD Component implementing instructions. The following plans are required by this instruction (11–E–1; 2., 3.):

Acquisition Plan
Configuration Plan
Computer Resources Life–Cycle Management Plan
Human Systems Integration Plan
Integrated Logistics Support Plan
Manufacturing Plan
Software Development Plan
Systems Engineering Management Plan
Test and Evaluation Master Plan
Training Development Plan
***Hardness Assurance, Maintenance and Surveillance (HAMS) Plans
***Risk Management Plans

***These plans do not exist in a single document.

3.2.12 Part 12 – Special Situations

- *Defense Enterprise Programs* (DEPs). Any ACAT program may be designated as a DEP and a candidate for milestone authorization. Designation may only be made by the Secretaries of the Military Departments, should occur no later than Phase I, and must be supported by a validated MNS, approved ORD, and a stable funding commitment. Except as reimposed by the Component AE, DEPs shall not be subject to any acquisition related regulation, policy, directive, or administrative rule or guideline other than those specified in law, the FAR, or DFAR. Reporting shall be through a streamlined chain of command; the PM shall be authorized certain staff positions; and, the program shall be managed by exception. Every two years, the Military Departments shall submit selected DEPs as candidates for milestone authorization. Authorization must be approved by both Congressional Armed Services Committees. (12–A–1; 2.)

- *Joint Programs*. Any system, subsystem, component, or technology program involving management or funding by more than one Component during any phase of a system's life–cycle shall be classified as a joint program. Mission needs, operational requirements, and plans shall be structured to encourage multi–Component participation. The Components shall periodically review their programs and requirements to determine the potential for cooperation. To the maximum extent possible, joint programs shall be integrated in all aspects. (12–B–1; 2.)

- *Assignment of Program Oversight*. Oversight responsibilities shall be assigned to a PEO or direct reporting PM within six months of: an ACAT I program new start, or a highly sensitive classified program new start (meeting ACAT I thresholds); being designated an ACAT I program, or a highly sensitive classified program (meeting ACAT I thresholds); a determination by the component that an ACAT II, III or IV program requires dedicated oversight or management as part of a PEO's program portfolio. All programs not overseen by a PEO (or direct reporting PM) shall be overseen by a commander of a systems, logistics, or materiel command. Transition of oversight from a PEO to a commander requires a program: to have achieved IOC, be mature, in stable production, and logistically supportable; to not be subject to any major P^3I or major block upgrades meeting ACAT I thresholds; and, to not involve any matters requiring dedicated oversight. (12–C–1; 2.)

3.2.13 Part 13 – Defense Acquisition Board Process

- ***The DAB*** shall meet for all potential ACAT I programs at MS 0 and all ACAT I program new starts at MS I. It shall meet at MS II, MS III, and MS IV for all ACAT I D programs. The USD(A) may hold special program reviews between milestones. (13–A–3; 3.)

- ***DAB Committee Reviews*** shall: verify that exit criteria and minimum phase accomplishments have been completed; provide an independent assessment of the program; and, make recommendations on cost–schedule–performance trade–offs proposed by the PM. With the approval of the USD(A), committee reviews may be held for other special purposes (e.g., baseline changes, release of withheld funds, acquisition strategy changes, etc). (13–A–3; 3.)

- ***Briefings by the PM*** during the process leading to the DAB shall be limited to those essential to the process. Figure 3.2–6 shows the DAB milestone timeline and PM briefing requirements. (13–A–4; 3.)

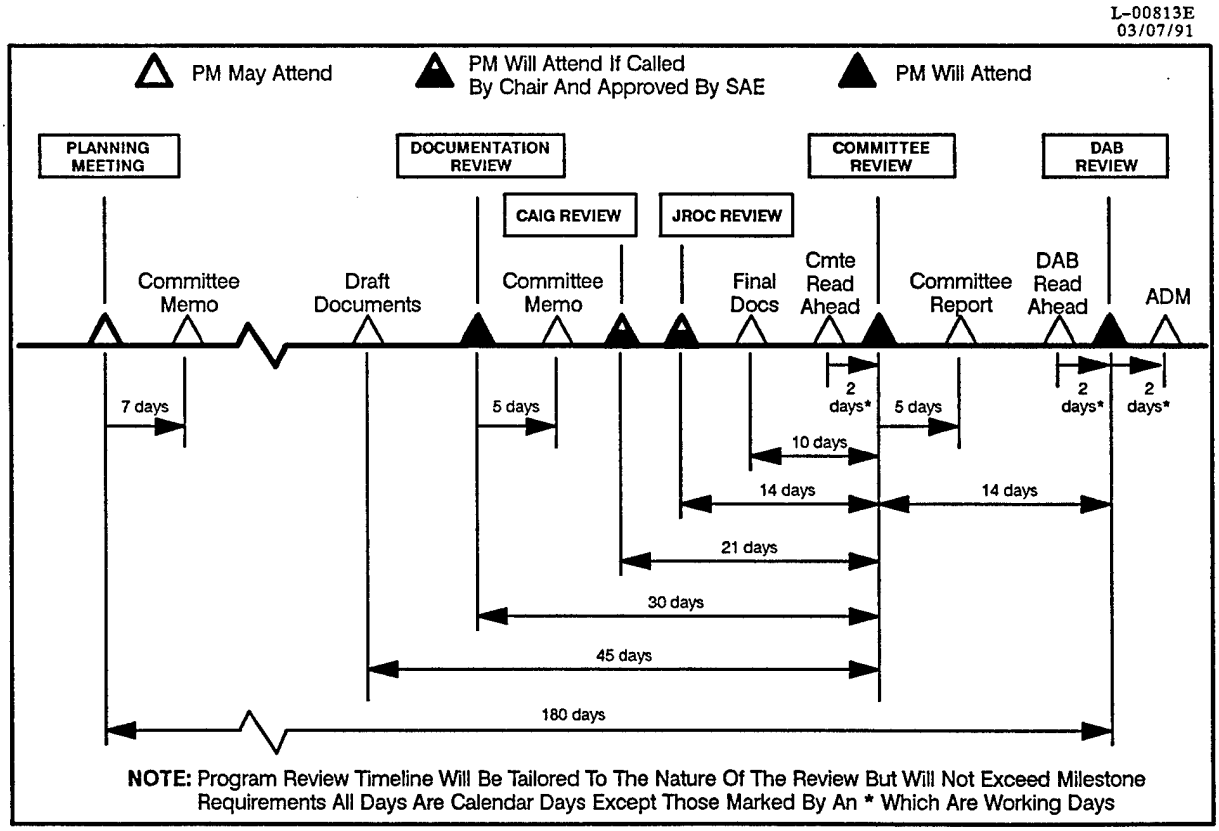


Figure 3.2–6 DAB Milestone Timeline

- *CAIG.* Program office and/or independent cost estimates required for ACAT I reviews shall be briefed to the OSD CAIG. This group may initiate contacts with program offices and contractors. (13–C–1; 2.)

- *JROC.* All deficiencies that may result in development of major systems shall be reviewed by the JROC prior to MS 0. Prior to all successive major program milestones, the JROC shall play a continuing role in this validation of performance goals and baselines. The JROC shall review MNSs for joint potential. (13–D–1; 2.)

3.2.14 Part 14 — Office Symbols and Titles

Addressed in this part of the instruction are OSD, Service, JCS, and other DoD Component office symbols and titles.

3.2.15 Part 15 — Definitions

See Appendix B.

3.2.16 Part 16 — Major Subject Index

This part of the instruction provides a cross–reference to the document by subject area.

3.3 DOD MANUAL 5000.2

This manual contains procedures and formats to be used in preparing milestone documentation, periodic reports, and statutory certifications. It is effective immediately for periodic reports and certifications; however, the milestone documentation formats first apply to programs coming to a milestone review after August 23, 1991. It is mandatory for use by all Components and may not be supplemented. Implementation procedures are allowed. The manual addresses the following documents:

- Mission Need Statement
- Operational Requirements Document
- Integrated Program Summary
  - Annex A — Program Structure
  - Annex B — Program Life-Cycle Cost Estimate Summary
  - Annex C — Acquisition Strategy Report
  - Annex D — Risk Assessment (Format)
  - Annex E — Environmental Analysis
  - Annex F — Affordability Assessment (Format)
  - Annex G — Cooperative Opportunities Document
- System Threat Assessment Report
- Manpower Estimate Report
- Test and Evaluation Master Plan
- Cost and Operational Effectiveness Analysis
- Low-Rate Initial Production Report for Naval Vessels and Satellites
- Live Fire Test and Evaluation Report
- Live Fire Test and Evaluation Waiver
- Competitive Prototype Strategy Waiver
- Value Engineering Report
- Acquisition Program Baselines
- Program Office and Independent Life-Cycle Cost Estimates
- Defense Acquisition Executive Summary
- Selected Acquisition Report
- Unit Cost Reporting
- Program Deviation Report
- Cost Management Reports
- Multiyear Procurement Contract Certification
- Fixed Price Contracting Certification.

APPENDIX A
DODD 5000.1 "DEFENSE ACQUISITION"

Department of Defense
DIRECTIVE

PB91-959509

February 23, 1991
NUMBER 5000.1

USD(A)

SUBJECT: Defense Acquisition

References:
(a) Secretary of Defense Report, "Defense Management Report to the President," July 1989
(b) DoD Directive 5000.1, "Major and Non-Major Defense Acquisition Programs," September 1, 1987 (hereby canceled)
(c) DoD Directive 4245.1, "Military Department Acquisition Management Officials," July 8, 1986 (hereby canceled)
(d) DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 23, 1991
(e) through (bbbb), see enclosures 4 and 5

A. REISSUANCE AND PURPOSE

This Directive:

1. Establishes a disciplined management approach for acquiring systems and materiel that satisfy the operational user's needs. This approach is based on the principles contained in the "Defense Management Report to the President" (reference (a)).

2. Replaces:

   a. DoD Directive 5000.1, "Major and Non-Major Defense Acquisition Programs" (reference (b)).

   b. DoD Directive 4245.1, "Military Department Acquisition Management Officials" (reference (c)).

3. Cancels the documents identified in enclosure 5, Cancellations (references (r) through (bbbb)), which will be replaced by DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures" (reference (d)).

B. APPLICABILITY AND PRECEDENCE

1. This Directive applies to:

   a. The Office of the Secretary of Defense, the Military Departments, the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Unified and Specified Commands, the Defense Agencies, and DoD Field Activities (hereafter referred to collectively as "DoD Components").

b. The management of major and nonmajor defense acquisition programs and highly sensitive classified programs.

2. This Directive and DoD Instruction 5000.2 (reference (d)) rank first and second in order of precedence for providing policies and procedures for managing acquisition programs, except when statutory requirements override. If there is any conflicting guidance pertaining to contracting, the Federal Acquisition Regulation and/or Defense Federal Acquisition Regulation Supplement shall take precedence over this Directive and DoD Instruction 5000.2.

3. The acquisition of nuclear and nuclear capable weapon systems is additionally governed by DoD Directive 3150.1, "Joint Nuclear Weapons Development Studies and Engineering Projects" (reference (e)).

4. The enclosures accompanying this Directive are part of the Directive and references to the Directive include references to the enclosures.

C. DEFINITIONS

1. Acquisition Program. A directed, funded effort that is designed to provide a new or improved materiel capability in response to a validated need.

2. Major Defense Acquisition Program. An acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and that is:

   a. Designated by the Under Secretary of Defense for Acquisition as a major defense acquisition program, or

   b. Estimated by the Under Secretary of Defense for Acquisition to require:

      (1) An eventual total expenditure for research, development, test, and evaluation of more than $200 million in fiscal year 1980 constant dollars (approximately $300 million in fiscal year 1990 constant dollars), or

      (2) An eventual total expenditure for procurement of more than $1 billion in fiscal year 1980 constant dollars (approximately $1.8 billion in fiscal year 1990 constant dollars).

3. Highly Sensitive Classified Program. An acquisition special access program established in accordance with DoD 5200.1-R, "Information Security Program Regulation" (reference (f)). Such a program is managed in accordance with DoD Directive O-5205.7, "Special Access Program Policy" (reference (g)).

4. Nonmajor Defense Acquisition Program. A program other than a major defense acquisition program or a highly sensitive classified program.

5. Milestones. Are major decision points that separate the phases of an acquisition program.

6. Milestone Decision Authority. The individual designated in accordance with criteria established by the Under Secretary of Defense for Acquisition to approve entry of an acquisition program into the next phase.

7. Performance. Those operational and support characteristics of the system that allow it to effectively and efficiently perform its assigned mission over time. The support characteristics of the system include both supportability aspects of the design and the support elements necessary for system operation.

8. Supplementation. The publication of directives, instructions, regulations, and related documents that add to, restrict, or otherwise modify the policies or procedures of a higher authority.

9. Implementation. The publication of directives, instructions, regulations, and related documents that define responsibilities and authorities and establish the internal management processes necessary to implement the policies or procedures of a higher authority.

D. POLICIES

The policies in this Directive govern defense acquisition by DoD Components. The acquisition policies in Part 1 of this Directive establish a disciplined approach for integrating the efforts and products of the Department's requirements generation; acquisition management; and planning, programming, and budgeting systems.

E. INTEGRATED MANAGEMENT FRAMEWORK

The integrated management framework envisioned in the policies in Part 1 is described in Part 2 of this Directive. This framework is intended to provide the basis for developing and publishing acquisition management policies established by this Directive that are consistent with and support the requirements generation system and the planning, programming, and budgeting system described herein.

F. RESPONSIBILITIES

DoD Component Heads shall ensure that the policies in this Directive are followed by their respective Components. The significant acquisition management responsibilities of key officials and forums are contained in Part 3 of this Directive.

G. SUPPLEMENTATION

Consistent with the objective of reducing the self-imposed administrative burden within the Department of Defense, this Directive shall not be supplemented, except as prescribed by statute, specifically authorized herein, or with the prior approval of the Secretary or the Deputy Secretary of Defense.

H. WAIVERS

Any requests for exceptions to any provisions of this Directive shall be submitted to the Secretary or the Deputy Secretary of Defense through the Under Secretary of Defense for Acquisition.

I. IMPLEMENTATION

1. The Under Secretary of Defense for Acquisition may issue instructions necessary to implement this Directive.

2. All officials with responsibilities assigned by this Directive shall coordinate as appropriate with other officials of the Department of Defense in carrying out those responsibilities.

3. DoD Component Heads shall establish strict controls to ensure that implementing directives, instructions, regulations, and related documents are kept to the absolute minimum consistent with this Directive.

J. EFFECTIVE DATE

This Directive is effective immediately.

Donald J. Atwood
Deputy Secretary of Defense

Enclosures - 5

1. Part 1 - Policies Governing Defense Acquisition
2. Part 2 - Integrated Management Framework
3. Part 3 - Responsibilities
4. Part 4 - References
5. Part 5 - Cancellations

PART 1

POLICIES GOVERNING DEFENSE ACQUISITION

A. OVERVIEW

The policies of this Directive establish a disciplined approach for integrating the efforts and products of the Department's requirements generation; acquisition management; and planning, programming, and budgeting systems. This approach provides for the following:

1. Translating Operational Needs into Stable, Affordable Programs. An integrated management framework shall be used for translating broadly stated mission needs into stable, affordable acquisition programs that meet the user's needs and can be sustained given projected resource constraints.

2. Acquiring Quality Products. A rigorous, event-oriented management process shall be used for acquiring quality products that emphasizes effective acquisition planning, improved communications with users, and aggressive risk management by both Government and industry.

3. Organizing for Efficiency and Effectiveness. A streamlined acquisition management structure shall be established with short, clearly defined lines of responsibility, authority, and accountability that promote increased efficiency and effectiveness.

B. TRANSLATING OPERATIONAL NEEDS INTO STABLE, AFFORDABLE PROGRAMS

Long-range modernization and investment planning and rigorous affordability assessments are essential to achieving greater program stability. Prudent management also dictates that new acquisition programs only be initiated after fully examining alternative ways of satisfying identified military needs. Once initiated, all programs must strike a sensible balance among cost, schedule, and performance considerations, given affordability constraints.

1. Long-Range Program Planning. Broad long-range investment plans shall be developed for each DoD Component with programming and budgeting responsibilities.

   a. The plans shall be based on the best estimate of future topline fiscal resources and form the basis for making long-range affordability assessments of acquisition programs.

   b. The Deputy Secretary of Defense shall approve the general nature of the plans and provide affordability planning guidance for structuring major defense acquisition programs.

c. The Under Secretary of Defense for Acquisition shall prepare long-range acquisition investment area analyses. The analyses are to:

(1) Provide insights for determining the timing and affordability of proposed new start acquisition programs.

(2) Identify highly promising technological opportunities for possible exploitation.

(3) Assess the potential outyear impact of the defense acquisition program on the U.S. technology and industrial base.

2. Evolutionary Requirements Definition. Mission needs shall be expressed initially in broad operational capability terms.

a. Identified mission needs shall first be assessed to determine if they can be satisfied by nonmateriel solutions. Nonmateriel solutions include changes in doctrine, operational concepts, tactics, training, or organization.

b. Once approved as a new start acquisition program, operational performance requirements for the concept(s) selected shall be progressively evolved from broad operational capability needs to system-specific performance requirements (e.g., for range, speed, weight, payload, reliability, maintainability, availability, interoperability).

c. Intelligence threat assessments shall be produced, approved, and validated for use by acquisition authorities to ensure that each system developed is mission-capable in its intended operational environment.

d. Intelligence assessment documents and documents identifying mission needs and operational performance requirements shall be standardized and be relatable to the acquisition process and program baselines.

3. Acquisition Process - Milestones and Phases. The acquisition process shall be structured in discrete logical phases separated by major decision points, called milestones.

a. The process shall begin with the identification of broadly stated mission needs that can not be satisfied by nonmateriel solutions.

b. Threat projections, life-cycle costs, cost-performance-schedule trade-offs, affordability constraints, and risk management shall be major considerations at each milestone beginning with the new start decision milestone.

c. The milestone decision authority for acquisition programs shall be delegated to the lowest level deemed appropriate by the Under

Secretary of Defense for Acquisition or the DoD Component Head as appropriate.

(1) To facilitate delegation, the Under Secretary of Defense for Acquisition shall establish acquisition program decision categories that are directly relatable to the streamlined acquisition chain of authority and accountability established by this Directive.

(2) These categories should also permit a clear correlation with program implementation and reporting requirements imposed by statute.

4. New Start Acquisition Programs. A full range of alternatives must be considered prior to deciding to initiate a new acquisition program. In support of this:

a. Studies shall be conducted of promising alternative materiel concepts that could satisfy an identified mission need prior to a decision to commit to a new start acquisition program. The Under Secretary of Defense for Acquisition shall coordinate the funding of such studies for mission needs that could potentially result in new start major defense acquisition programs.

b. A hierarchy of potential materiel alternatives must be considered prior to a decision to commit to a new start acquisition program. The order of preference for materiel alternatives generally is:

(1) Use or modification of an existing U.S. military system.

(2) Use or modification of an existing commercially developed or Allied system that fosters a nondevelopmental acquisition strategy.

(3) A cooperative research and development program with one or more Allied nations.

(4) A new joint-Service development program.

(5) A new Service-unique development program.

c. The Deputy Secretary of Defense shall approve funding for the initiation of new major defense acquisition programs and all highly sensitive classified programs and shall establish affordability planning constraints for those programs approved.

5. Sensitive Information and Technologies. Sensitive information and technologies shall be identified early and protected from inadvertent or unauthorized disclosure. The identification of such information and technologies, and decisions on their transfer to foreign governments and foreign contractors in support of cooperative programs, foreign contracting and foreign sales, shall be accomplished early in the acquisition process and shall be reassessed at each milestone decision point.

C. ACQUIRING QUALITY PRODUCTS

Effective acquisition planning and aggressive risk management by both Government and industry are essential for success. Program decisions and resource commitments must be based on plans for, and progress in, controlling risk.

1. Acquisition Strategies and Program Plans. Acquisition strategies and program plans shall be tailored to accomplish established program objectives and to control risk. They must also provide the information essential for milestone decisions. In this regard:

   a. Acquisition strategies shall be event-driven and explicitly link major contractual commitments and milestone decisions to demonstrated accomplishments in development and testing.

   b. Program plans must provide for a systems engineering approach to the simultaneous design of the product and its associated manufacturing, test, and support processes. This concurrent engineering approach is essential to achieving a careful balance among system design requirements (e.g., operational performance, producibility, reliability, maintainability, logistics and human factors engineering, safety, survivability, interoperability, and standardization).

   c. Maximum practicable use shall be made of commercial and other nondevelopmental items. In describing these items, maximum practicable use shall be made of non-Government standards and commercial item descriptions.

   d. Solicitations and contract requirements shall be streamlined at program initiation and during each subsequent acquisition phase.

      (1) Solicitations shall be structured and timed so that they do not foreclose trade-off options at milestone decision points.

      (2) Contract requirements that are not mandated by law, Federal Acquisition Regulation and/or Defense Federal Acquisition Regulation Supplement, or established policies and that do not contribute to system performance or effective management shall be excluded.

2. Risk Management. Program risks and risk management plans shall be explicitly assessed at each milestone decision point prior to granting approval to proceed into the next acquisition phase.

   a. Critical parameters that are design cost drivers or have a significant impact on readiness, capability, and life-cycle costs must be identified early and managed intensively.

   b. Technology demonstrations and aggressive prototyping (including manufacturing processes, hardware and software systems, and

critical subsystems), coupled with early operational assessments, are to be used to reduce risk.

c. Test and Evaluation shall be used to determine system maturity and identify areas of technical risk.

d. Solicitation documents shall require contractors to identify risks and specific plans to assess and eliminate risks or reduce them to acceptable levels.

e. Risk areas to be assessed at milestone decision points shall include:

(1) Threat, technology, design and engineering, support, manufacturing, cost, and schedule.

(2) The risks inherent in the degree of concurrency being proposed.

f. Schedule shall be subject to trade-off as a means of keeping risk at acceptable levels.

3. Contract Type Selection. The contracting approach selected for each acquisition phase must permit an equitable and sensible allocation of risk between Government and industry.

a. Fixed price-type development contracts for major systems and subsystems in excess of $10 million shall not be used without the prior approval of the Under Secretary of Defense for Acquisition. This shall also apply to nonmajor systems and subsystems.

b. Fixed price-type contracts for lead ships must be approved by the Under Secretary of Defense for Acquisition.

4. Program Objectives and Baselines. Broad objectives for cost, schedule, and performance parameters are to be established beginning at the new start milestone decision point. They are to be refined, expanded as appropriate, and included in subsequent program baselines.

a. Design to average unit procurement cost objectives based on realistic quantities and production rates shall be established for all major defense acquisition programs and for highly sensitive classified programs that meet the cost thresholds for major defense acquisition programs. They may also be established for nonmajor defense acquisition programs and highly sensitive classified programs below the cost threshold of major defense acquisition programs, at the discretion of the milestone decision authority.

b. Performance objectives must satisfy identified operational needs and be verifiable by testing. They must include critical supportability factors such as reliability, availability, and maintainability.

c. The user or user's representative shall participate in the development of operational performance objectives.

5. Competition and Source Selection. Defense systems, subsystems, equipment, supplies and services shall be acquired on a competitive basis to the maximum extent practicable as a means of achieving cost, schedule, and performance benefits.

a. This policy is not intended to affect adversely such programs as those dealing with small, minority, and disadvantaged business, small business innovation research, and establishment of minority business goals, consistent with applicable law.

b. The feasibility, cost, and benefits of competition in each phase of a program's implementation shall be explicitly addressed at each milestone, beginning with the new start milestone decision point. This includes competition for ideas and technologies in the early phases, and the use of competitive procedures that provide the greatest benefit to the Government.

c. Contractors' past performance and current capability (technical, logistical, physical, financial, and managerial) shall be considered in source selection and responsibility determinations.

6. Contractor Management Information Systems. Contractor management information and program control systems, and reports emanating therefrom, shall be used to the maximum extent possible.

a. Contractors shall not be required to revise existing systems except as necessary to satisfy DoD criteria.

b. Documentation and information shall be limited to the minimum amount needed to satisfy necessary and specific management needs.

c. No funds may be obligated or expended to prepare or assist any contractor in preparing any material, report, list, or analysis with respect to the actual or projected economic or employment impact on a particular State or Congressional district of an acquisition program for which all research, development, test, and evaluation has not been completed.

D. ORGANIZING FOR EFFICIENCY AND EFFECTIVENESS

Short lines of responsibility and authority must be coupled with clear accountability for implementing established policies and procedures. Coupled with a well-trained and motivated acquisition work force and strict limitations on supplementation and implementation, this will facilitate decisionmaking, foster uniformity, and lead to a more efficient and effective acquisition management system.

1. Short, Clear Lines of Authority and Accountability

a. Each DoD Component with acquisition management responsibilities shall maintain a streamlined chain of authority and accountability for managing major defense acquisition programs and highly sensitive classified programs above the cost thresholds for a major defense acquisition program. This chain of authority and accountability shall extend from a DoD Component Acquisition Executive through Program Executive Officers to individual Program Managers. Program Managers may report directly to the DoD Component Acquisition Executive when the head of the DoD Component involved determines that it is warranted.

(1) Program direction and control must be issued by, and flow through, this streamlined chain. This includes all matters pertaining to cost, schedule, performance, and allocated program funding.

(2) Individual personnel performance evaluations shall be rendered only within this streamlined chain of authority.

(3) The authority to approve the written acquisition plans required by the Federal Acquisition Regulation, reference (h), and the Defense Federal Acquisition Regulation Supplement, reference (i), shall be delegated to the lowest level deemed practicable by the DoD Component Acquisition Executive.

(4) Program Executive Officers shall receive separate allocation of funds and normally shall be delegated authority to approve below threshold reprogramming actions within their allocation in accordance with DoD Component funds control procedures. This authority shall be limited to those programs for which they exercise management control.

(5) Personnel authorizations and funding for the offices of Program Executive Officers and the offices of their assigned Program Managers, and direct reporting Program Managers, shall be administered separately from the Military Departments' systems, logistics, and materiel commands.

b. A similar streamlined structure shall be established for managing nonmajor defense acquisition programs and highly sensitive classified programs below the cost thresholds for a major defense acquisition program.

(1) No more than two levels of review shall exist between Program Managers of these programs and their designated milestone decision authority.

(2) Individual personnel performance evaluations shall be rendered only within this streamlined chain of authority.

c. The roles of the Military Departments' systems, logistics, and materiel commands shall primarily focus on:

(1) Providing essential logistical support for deployed equipment and forces.

(2) Exercising direction and control over assigned programs (other than those conducted under the Program Executive Officer structure) and acquisition related activities (e.g., test centers, laboratories, and support centers).

(3) Providing a variety of support services to Program Executive Officers and Program Managers of major defense acquisition programs and highly sensitive classified programs, while duplicating none of their responsibilities or functions. Support services include procurement and contracting, legal, finance and accounting, systems engineering and logistics, developmental test and evaluation, and other such support.

2. Role of Boards, Councils, Committees, and Staffs. Boards, councils, committees, and staffs facilitate decisionmaking by providing advice to those responsible for managing programs. They also may develop independent assessments of programs when requested by milestone decision authorities for their consideration. They have no authority to and shall not issue programmatic direction or impede the orderly progression of programs through the acquisition process.

3. Independent Operational Test Activity.

a. The Director of Operational Test and Evaluation shall prescribe policies and procedures for the conduct of operational test and evaluation in the Department of Defense.

b. The head of each Military Department and, as appropriate, Defense Agency shall establish an independent operational test and evaluation activity. This activity shall:

(1) Be separate and independent from the materiel-developing and -procuring agency and the using agency.

(2) Be responsible for planning and conducting operational tests, reporting results, and providing evaluations of each tested system's operational effectiveness and suitability.

(3) Report directly to the head of the DoD Component, except that the Secretary of a Military Department may delegate responsibility for supervising this activity to the Service Chief concerned.

c. Acquisition managers shall not influence or attempt to influence the objectivity and completeness of test results presented to decisionmakers by the independent operational test activity.

4. Tenure of Key Officials. Program Managers of major defense acquisition programs shall direct their programs for 4 years or until completion of a major program milestone. Program Managers of highly sensitive classified programs above the cost thresholds for a major defense acquisition program shall direct their programs for 4 years or until completion of a major program milestone. Program Executive Officers should have tenure of at least comparable duration.

5. Acquisition Corps. Dedicated acquisition corps shall be established and managed in accordance with applicable law.

6. Acquisition Policy and Procedures. The policies established by this Directive provide an integrated approach for defense acquisition.

   a. The Under Secretary of Defense for Acquisition shall establish and publish acquisition management policies and procedures that are consistent with and support:

      (1) The policies established by this Directive.

      (2) The guidelines of Office of Management and Budget Circular A-109, "Major System Acquisitions" (reference (j)).

      (3) The provisions of current statutes.

   b. Highly sensitive classified programs shall comply with the acquisition management policies and procedures established by the Under Secretary of Defense for Acquisition for such programs.

   c. The objectives of these policies and procedures shall be to establish a disciplined, rigorous acquisition management process with clear, uniform standards and to avoid the proliferation of documents and guidance. Accordingly, they shall be structured so that they can be implemented down to the Program Manager and field operating level without supplementation and with minimum implementing directives, instructions, regulations, and related documents.

PART 2

INTEGRATED MANAGEMENT FRAMEWORK

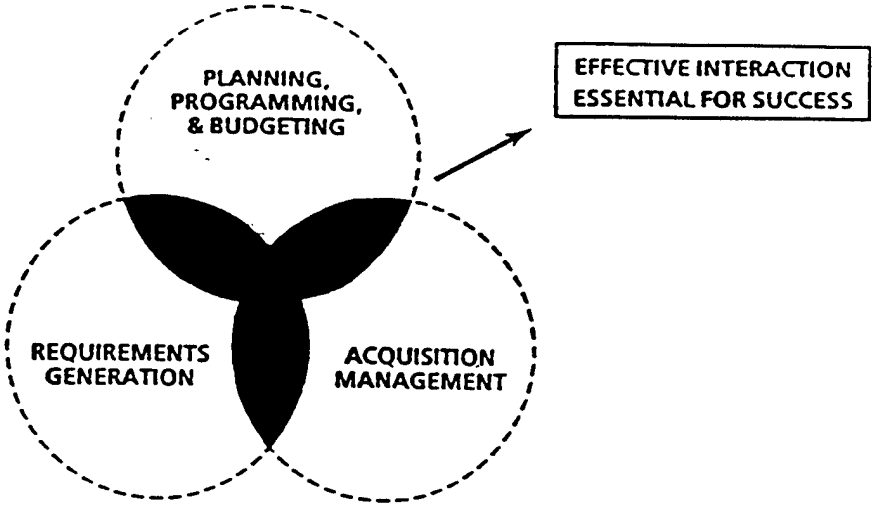
A. OVERVIEW

The policies established in Part 1 forge a closer, more effective interface among the Department's three major decisionmaking support systems affecting acquisition. These are the:

- Requirements Generation System.
- Acquisition Management System.
- Planning, Programming, and Budgeting System.

This part describes the major characteristics of each system and highlights the complex relationships that must be maintained for effective decisionmaking. These characteristics and relationships define the integrated management framework for defense acquisition. This part describes the disciplined integration of the three systems and is not intended to establish policy. Elements of the decisionmaking systems described below are adjusted as necessary to assist the Secretary of Defense in decisionmaking as circumstances change.

THE THREE SYSTEMS



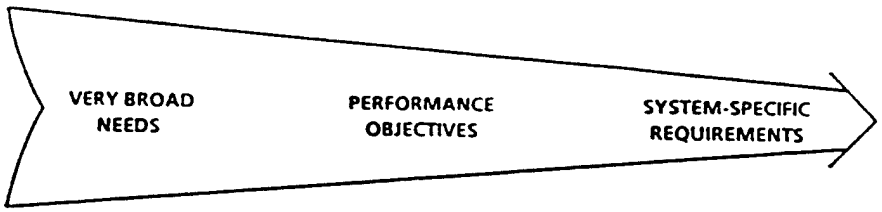
B. REQUIREMENTS GENERATION SYSTEM

1. Overview. The requirements generation system produces information for decisionmakers on projected mission needs.

   a. The needs identified are expressed initially in broad operational terms. They are progressively translated into system-specific performance requirements.

   b. This evolutionary approach enables decisionmakers to make informed cost-performance-schedule trade-offs at critical points in a program's implementation.

REQUIREMENTS EVOLUTION



2. Identifying and Processing Mission Needs. Mission needs are identified as a direct result of continuing assessments of current and projected capabilities in the context of changing military threats and national defense policy.

   a. The assessments are conducted by the Unified and Specified Commands, the Military Departments, the Office of the Secretary of Defense, and the Chairman of the Joint Chiefs of Staff. Their purpose is to identify deficiencies that may result in a need to:

      (1) Change doctrine, tactics, training, or organization;

      (2) Fix shortcomings in existing materiel; or

      (3) Introduce new operational capabilities.

   b. Assessments may also identify opportunities made possible by technological breakthroughs that could reduce ownership costs or improve the effectiveness of current materiel.

   c. Decisionmakers review the results of these assessments to determine what actions, if any, should be taken to meet the needs identified.

      (1) Needs that can be satisfied by changes in doctrine, tactics, training, or organization are sent to the Military Departments for consideration and action.

(2) Needs that could potentially result in the establishment of new defense acquisition programs are described in Mission Need Statements.

3. Developing and Processing Mission Need Statements. The Mission Need Statement defines projected needs in broad operational terms.

a. Examples of such needs include:

(1) The need to impede the advance of large armored formations 200 kilometers beyond the front lines; or

(2) The need to neutralize advances in submarine quieting made by potential adversaries.

b. Mission Need Statements that potentially could result in the initiation of new major defense acquisition programs are processed as described in subsection B.4., below. The following factors should be considered when determining how to process the Statement:

(1) A determination of whether or not an identified need could result in the initiation of a new major defense acquisition program is highly subjective.

(2) In general, an identified need should be placed in this category if it potentially could result in:

(a) A capability that may require the use of new, leading edge technologies and an extensive development effort.

(b) The initiation of a major performance envelope upgrade to an existing system that is fielded in significant quantities.

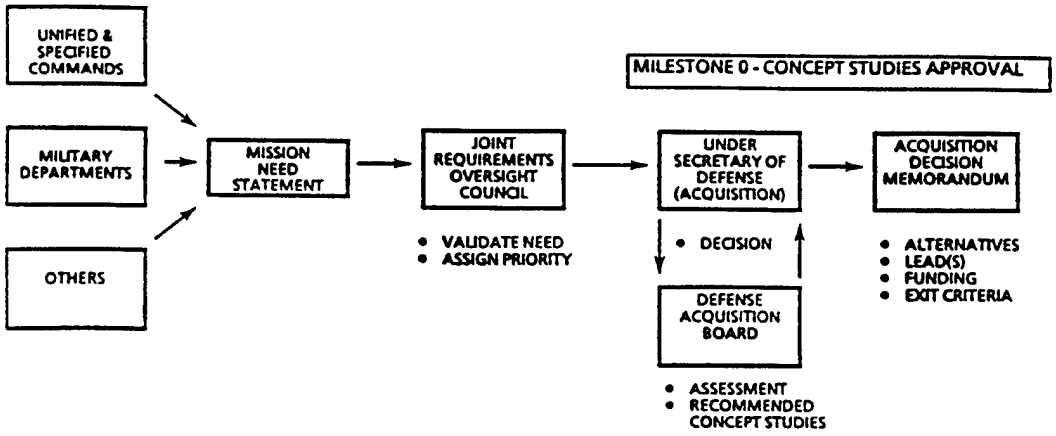
(3) When there is doubt, the need should be treated as if it would result in a new major defense acquisition program.

c. Statements that potentially could result in the initiation of nonmajor defense acquisition programs are sent to the appropriate DoD Component for consideration and action. DoD Components send an information copy of these Statements to the Chairman of the Joint Chiefs of Staff, to assess joint potential.

4. Processing Mission Need Statements for Major Defense Acquisition Programs. Statements that potentially could result in a new major defense acquisition program are processed as described below.

MISSION NEED STATEMENT FLOW

(MAJOR DEFENSE ACQUISITION PROGRAMS)



a. These Statements are forwarded through established review channels to the Joint Requirements Oversight Council.

(1) This council is chaired by the Vice Chairman of the Joint Chiefs of Staff.

(2) The Vice Chiefs of Staff of the Army and Air Force, the Vice Chief of Naval Operations, and the Assistant Commandant of the Marine Corps are members of the Council.

b. The Council reviews each Mission Need Statement and confirms that the identified mission need cannot be satisfied by a nonmateriel solution (e.g., a change in doctrine, operational concepts, tactics, training, or organization). When a nonmateriel solution is not considered to be feasible, the Council determines the validity of the identified mission need and forwards the Mission Need Statement as either approved or disapproved to the Under Secretary of Defense for Acquisition. For those Statements it approves, the Council will also assign a joint priority.

5. Milestone 0, Concept Studies Approval. The Under Secretary of Defense for Acquisition decides whether to convene a Defense Acquisition Board for review of the Mission Need Statement.

a. The Defense Acquisition Board is chaired by the Under Secretary of Defense for Acquisition.

(1) The Vice Chairman of the Joint Chiefs of Staff serves as vice chairman of the Board.

(2) Other members of the Board include the Service Acquisition Executives of the Departments of the Army, Navy, and Air Force; the Director of Defense Research and Engineering; the Assistant Secretary of Defense for Program Analysis and Evaluation; the Comptroller of the Department of Defense; and the Director of Operational Test and Evaluation.

b. This review and decision point is called Milestone 0 - Concept Studies Approval. It marks the initial interface between the requirements generation and the acquisition management systems.

c. The Under Secretary's decision on each Statement reviewed by the Defense Acquisition Board is reflected in an Acquisition Decision Memorandum. For each Statement receiving favorable consideration, the Acquisition Decision Memorandum:

(1) Directs studies of a minimum set of materiel alternatives.

(2) Designates one or more of the Military Departments or Defense Agencies to conduct the studies and present the results at the next milestone decision point.

(3) Identifies a source of funding for the studies. The monies may come from reprogramming, budget amendment actions, or study funds controlled by one or more of the DoD Components.

d. Mission Need Statements that could result in the initiation of new nonmajor defense acquisition programs are processed using the procedures established by each DoD Component Head.

6. Subsequent Phases and Milestone Decision Points. The interaction between the requirements generation and acquisition management systems continues through subsequent phases and milestone decision points.

a. The user or the user's representative plays a critical role by translating the broadly stated needs into operational performance parameters and minimum acceptable operational requirements for the proposed system.

(1) These parameters and requirements are reflected in an operational requirements document.

(2) They provide a basis for cost-schedule-performance trade-offs and the development of performance objectives in acquisition program baselines and system-specific performance requirements in contract specifications.

b. The milestone decision points and phases are highlighted in section C., below. They are described in more detail in DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures" (reference (d)).

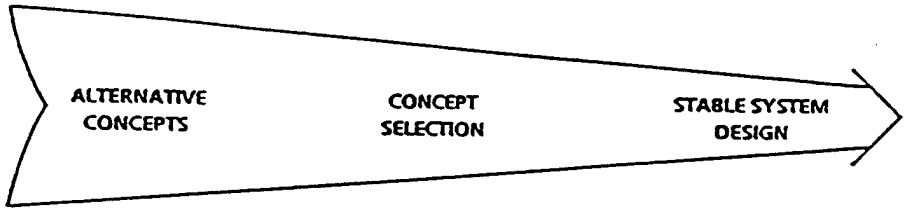
C. ACQUISITION MANAGEMENT SYSTEM

1. Overview. The acquisition management system provides for a streamlined acquisition management structure and an event-driven acquisition process that explicitly links milestone decisions to demonstrated accomplishments.

   a. The process provides the basis for making informed trade-off decisions, given affordability constraints and the user's needs.

   b. It is the means for translating the user's needs into alternative concepts and, ultimately, a stable system design.

ACQUISITION DESIGN EVOLUTION



2. Milestone Decision Points. Milestone decision reviews occur at critical junctures in a program's implementation. The products of all three management systems must be effectively integrated at these decision points. This is critical to structuring sound, affordable programs that satisfy the user's needs.

   a. At each decision point, the milestone decision authority:

      (1) Assesses the status of the program relative to the user's needs, the established program baseline and acquisition strategy, and approved financial plans.

      (2) Evaluates the updated acquisition strategy and the plans for conducting the next phase and managing risk.

      (3) Makes cost-performance-schedule trade-offs, assesses the affordability of what is being proposed, and determines if the program should be terminated, redirected, or allowed to continue into the next phase. For those programs receiving a go-ahead, the decision authority establishes:

         (a) A refined program baseline for the next phase containing appropriate objectives and thresholds for cost, schedule, and performance; and

(b) Program-specific accomplishments, called exit criteria, that must be satisfied during the next acquisition phase.

b. The Joint Requirements Oversight Council plays a major role in the milestone reviews of all acquisition programs reviewed by the Defense Acquisition Board. In this regard, the Council:

(1) Confirms that the mission need is still valid.

(2) Confirms that the proposed performance objectives and thresholds satisfy the need given a validated threat assessment.

(3) Provides recommendations on proposed cost-performance-schedule trade-offs based on affordability, technological constraints, interoperability, and overall program progress.

3. Acquisition Phases. The acquisition phases provide a logical means of progressively translating broadly stated mission needs into well-defined system-specific requirements.

a. The focus and specific activities of each phase must be event-oriented and tailored to:

(1) Support attainment of established minimum required accomplishments, program-specific exit criteria, and program objectives.

(2) Provide the information needed for decisionmaking at each milestone.

b. Since phases invariably span several fiscal years, the progress of program implementation must be closely linked with the planning, programming, and budgeting system process described in section D., below.

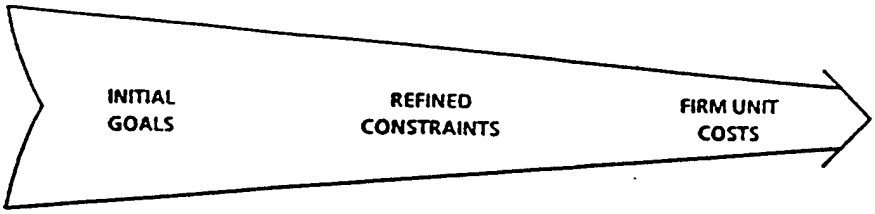
D. PLANNING, PROGRAMMING, AND BUDGETING SYSTEM

1. Overview. The products of the planning, programming, and budgeting system provide the basis for making informed affordability assessments and resource allocation decisions on defense acquisition programs.

a. Initial affordability goals and resource commitments are made based on best estimates of realistic topline fiscal constraints.

b. These goals and resource commitments are subsequently refined in light of program progress and major changes in outyear fiscal projections.

AFFORDABILITY CONSTRAINTS

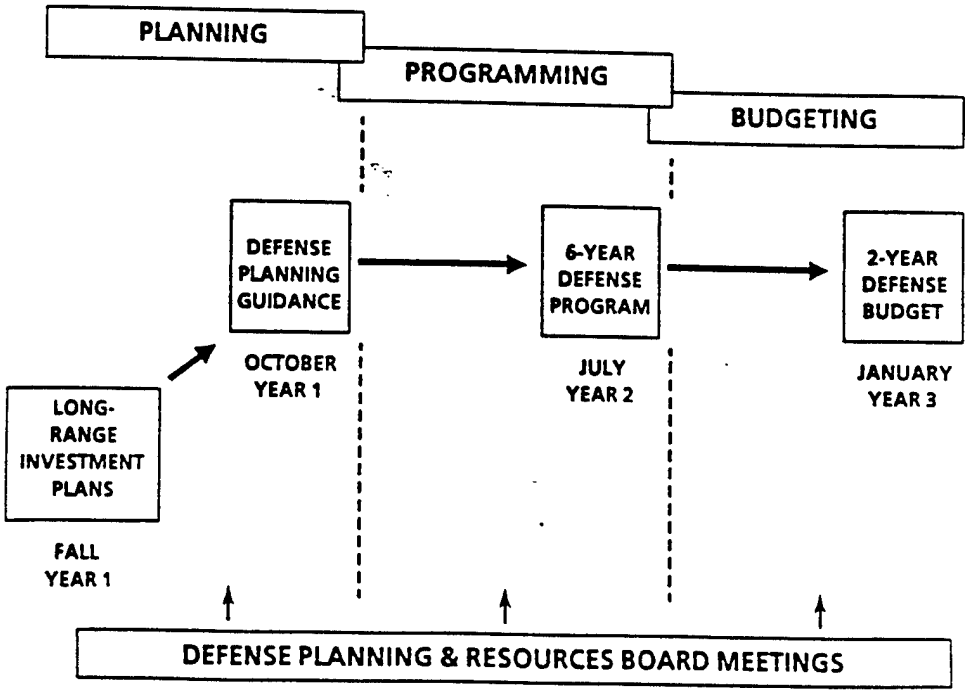


2. The Three Phases of the Process. The planning, programming, and budgeting system defined by DoD Directive 7045.14, "The Planning, Programing, and Budgeting System (PPBS)" (reference (k)), and DoD Instruction 7045.7, "Implementation of the Planning, Programing, and Budgeting System (PPBS)" (reference (l)), encompasses three major phases.

a. Each phase is structured to provide a product by an established calendar suspense date (e.g., the Defense Planning Guidance is to be published by 1 October of every other calendar year).

b. These phases, illustrated in simple form below, enable decisionmakers to translate national strategies and objectives into long-range program plans and planning guidance, 6-year defense programs, and 2-year budget requests.

PLANNING, PROGRAMMING, & BUDGETING SYSTEM



c. The Defense Planning and Resources Board meets during each phase. The purpose of these meetings is to facilitate decisionmaking by the Secretary and Deputy Secretary of Defense.

(1) The Deputy Secretary of Defense chairs Defense Planning and Resources Board meetings.

(2) Board members include the Secretaries of the Military Departments, the Chairman of the Joint Chiefs of Staff, the Under Secretaries of Defense for Acquisition and Policy, the Assistant Secretary of Defense for Program Analysis and Evaluation, and the Comptroller of the Department of the Defense.

(3) The Vice Chairman of the Joint Chiefs of Staff, the Service Chiefs, and representatives of the Director of the Office of Management and Budget and the Assistant to the President for National Security Affairs attend on a regular basis as appropriate. The Commanders in Chief of the Unified and Specified Commands, and selected Assistant Secretaries of Defense attend meetings as required.

3. Planning Phase. The planning phase results in the development of a broad long-range investment plan for each DoD Component with programming and budgeting responsibilities and the Defense Planning Guidance.

a. The purpose of the long-range plans is to reflect the projected major modernization and investment requirements, including acquisition, of each DoD Component.

(1) The Deputy Secretary of Defense approves or modifies the general nature of the plans, after Defense Planning and Resources Board review.

(2) The approved plans will be used in assessments of the affordability of acquisition programs during the programming phase.

(3) They also are used in developing the Defense Planning Guidance and assessing the affordability of major resource changes being proposed in the acquisition management system.

b. The Defense Planning Guidance sets forth broad policy objectives and military strategy. It identifies priority operational capability objectives where possible, and the resources to be allocated to achieve those objectives.

(1) The military strategy and priority capability objectives define the required capabilities of U.S. military forces and establish the need for selected acquisition programs.

(2) The Defense Planning Guidance is reviewed and discussed by the Defense Planning and Resources Board and approved in final form by the Secretary of Defense. This document is to be published by 1 October of every other calendar year.

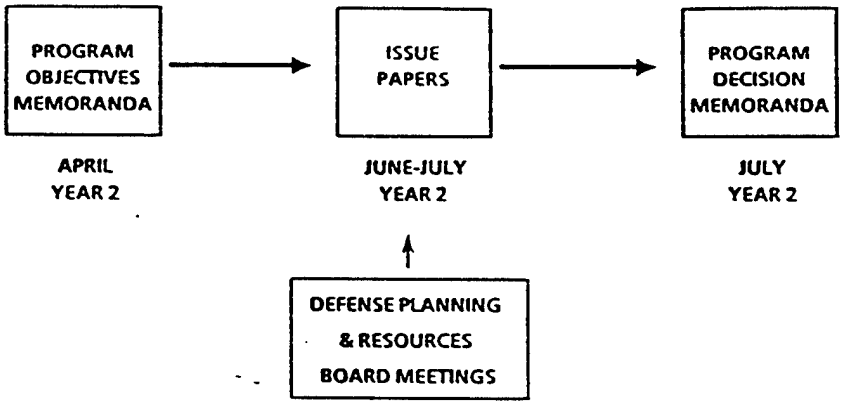
(3) The approved document guides development of the 6-year Defense Program, which is produced during the programming phase.

4. Programming Phase. The programming phase results in development of a 6-year Defense Program for each DoD Component, and for the Department of Defense as a whole.

a. The 6-year program links national policies, strategy, and objectives to specific forces and major programs, including acquisition programs. It is based on the Defense Planning Guidance and on updated outyear fiscal projections.

b. Key products and features of this phase are illustrated and discussed below.

PROGRAMMING PHASE



c. The 6-year program proposals of each DoD Component with programming responsibilities are described in a document called a Program Objectives Memorandum. These documents are submitted in April of every other calendar year.

(1) Each Commander in Chief of the Unified and Specified Commands prepares a list of program needs prioritized across Service and functional lines and with consideration of reasonable fiscal constraints. These lists, known as Integrated Priority Lists, aid in Program Objectives Memorandum development and review.

(2) The Program Objectives Memoranda are reviewed by the staff offices of the Secretary of Defense, the Commanders in Chief of the Unified and Specified Commands, and the Chairman of the Joint Chiefs of Staff.

(3) The purpose of these reviews is to highlight major programmatic issues for discussion by the Defense Planning and Resources Board.

d. The Deputy Secretary decides which issues will be addressed by the Defense Planning and Resources Board.

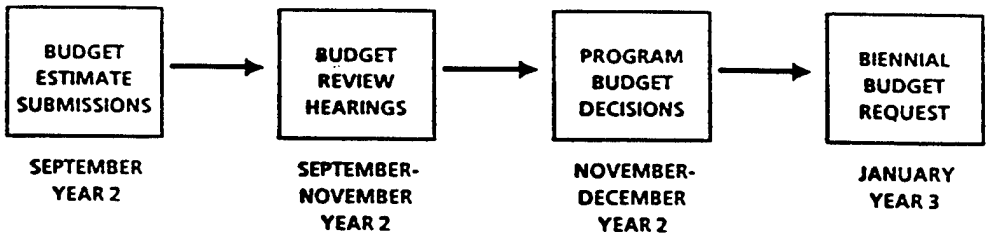
(1) Issue papers are then prepared by staff offices of the Secretary of Defense and discussed by the Board. These discussions generally take place in June and July of every other calendar year.

(2) Acquisition program issue papers typically address the need for and affordability of proposed new and ongoing major defense acquisition programs. They also identify potential alternatives to those programs.

e. The Deputy Secretary of Defense decides what actions are to be taken on each issue presented. The decisions are recorded and issued to each DoD Component in a Program Decision Memorandum, which provides the basis for the financial plans developed during the budgeting phase.

5. Budgeting Phase. The budgeting phase results in development of the Secretary of Defense's recommendations to the President for the Administration's biennial budget request for the Department of Defense. Key features and products of this phase are illustrated and discussed below.

BUDGETING PHASE



a. The budget proposals of each DoD Component with budgeting responsibilities are forwarded to the Comptroller of the Department of Defense in documents called Budget Estimate Submissions. These documents are submitted in September of every other calendar year. They are distributed to the staff offices of the Secretary of Defense and to the Chairman of the Joint Chiefs of Staff for review.

b. Budget hearings are conducted by representatives of the Office of the Comptroller of the Department of Defense in concert with other members of the Office of the Secretary of Defense and analysts from the Office of Management and Budget. They focus on the execution status of specific programs, including programs reviewed by the Defense Acquisition Board.

(1) Documents called Program Budget Decisions are drafted by the office of the Comptroller of the Department of Defense as a result of the hearings.

(2) These documents present alternatives to the budget estimates submitted by the DoD Components with budgeting responsibilities. They are reviewed and commented on by staff offices of the Secretary of Defense; the Military Departments and Defense Agencies affected by the decisions; the Chairman of the Joint Chiefs of Staff; and the Commanders in Chief of the Unified and Specified Commands.

c. Budget wrap-up meetings, held in December by the Secretary and Deputy Secretary of Defense, provide the Service Secretaries; the Chairman of the Joint Chiefs of Staff; and others an opportunity to raise and resolve major issues before the budget request is finalized.

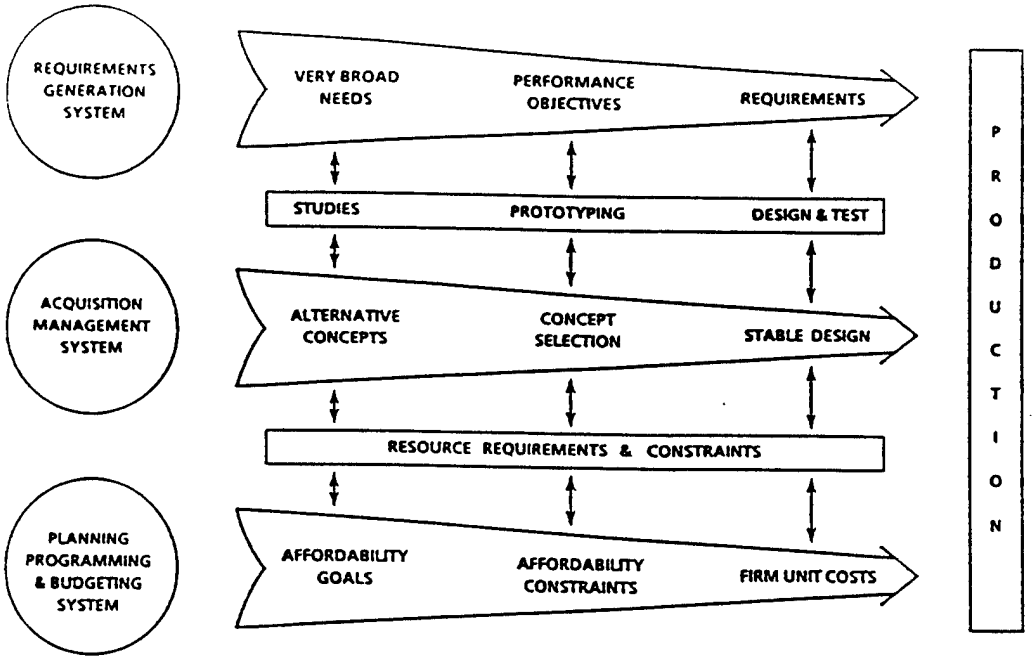
d. The decisions made by the Secretary as a result of these meetings are reflected in the Department's biennial budget request, which is submitted to the President for approval. Once approved by the President, it is sent to the Congress in January as part of the President's budget for the Federal Government.

e. Biennial budgeting has not been fully accepted in practice by the Congress. This has required some form of budget review to occur in the off-year of the 2-year budget cycle of the Department. The extent of this review has varied depending on the magnitude of the expected change in topline fiscal guidance.

E. SUMMARY

Providing the quality products needed by the Nation's armed forces requires a highly disciplined management framework that effectively translates operational needs into stable, affordable acquisition programs. The policies of Part 1 and the management approach described herein establish that framework. The complex interactions that must occur within this framework are summarized on the following page.

KEY INTERACTIONS



- Broad mission needs must be initially identified by the requirements generation system.
- The acquisition system must identify and assess alternative ways of satisfying these needs in light of current and projected technology development, producibility, industrial capability, and support infrastructure constraints.
- Initial affordability decisions on proposed new acquisition programs must be made in the planning, programming, and budgeting system process based on the Defense Planning Guidance, the approved long-range investment plans, and overall funding constraints.
- The initial broad mission need statements must be progressively translated into performance objectives, system-specific performance requirements, and a stable system design that can be efficiently produced.
- Major cost-performance-schedule trade-offs must be made throughout the course of program implementation. They are based on validated threat assessments, the status of program execution, risk assessment, testing results, and affordability constraints brought about by changes in topline fiscal guidance.

PART 3

RESPONSIBILITIES

This part describes the significant acquisition related responsibilities of key officials and forums. This part is descriptive only; it does not assign responsibilities or provide authorities. The responsibilities and authorities are set forth in the individual DoD Directives for each position and forum.

A. The Deputy Secretary of Defense approves funding for proposed new start major defense acquisition programs and all highly sensitive classified programs and provides general affordability planning guidance for use in structuring these programs.

B. The Chairman of the Joint Chiefs of Staff, assisted by the Vice Chairman and members of the Joint Chiefs of Staff, establishes and publishes policies and procedures governing the requirements generation system. These policies and procedures:

1. Define the processes for developing, reviewing, and approving Mission Need Statements and the standardized operational requirements documents required by this Directive.

2. Establish the responsibilities for these processes and the publication of implementing instructions.

C. The Under Secretary of Defense for Acquisition:

1. Exercises the responsibilities and authorities in DoD Directive 5134.1, "Under Secretary of Defense (Acquisition)," and DoD Directive 5000.49, "Defense Acquisition Board" (references (m) and (n)).

2. Establishes and publishes acquisition management policies and procedures that supplement and implement the provisions of this Directive.

3. Prepares long-range acquisition investment area analyses.

4. Coordinates the funding of concept direction studies.

D. The Secretary of each Military Department:

1. Ensures that the policies and procedures established for the Department of Defense's three major decisionmaking support systems are effectively implemented.

2. Designates a single, full-time Acquisition Executive at the Assistant Secretary level with duties and responsibilities as described in section I., below.

3. Selects Program Executive Officers and establishes a centralized system for selecting Program Managers for major and nonmajor defense acquisition programs and highly sensitive classified programs.

4. Charters a Department-level acquisition program review forum similar to that described in DoD Directive 5000.49, "Defense Acquisition Board" (reference (n)).

E. Heads of Other DoD Components having Acquisition Management Responsibilities appoint a single, full-time Acquisition Executive with duties and responsibilities as described in section I., below.

F. The Vice Chairman of the Joint Chiefs of Staff, representing the Chairman of the Joint Chiefs of Staff:

1. Serves as chairman of the Joint Requirements Oversight Council.

2. Serves as vice chairman of the Defense Acquisition Board.

3. Represents the Commanders in Chief of the Unified and Specified Commands on acquisition and requirements matters.

4. Serves on the Nuclear Weapons Council.

G. The Chief of Each Military Service:

1. Assists the Chairman of the Joint Chiefs of Staff in developing standardized policies and procedures governing the requirements generation system.

2. Ensures within the scope of his authority that the policies and procedures developed are effectively implemented.

H. The Director, Operational Test and Evaluation, Office of the Secretary of Defense:

1. Prescribes policies and procedures governing the conduct of operational test and evaluation.

2. Provides independent assessments and reports as required by current statutes.

I. DoD Component Acquisition Executives:

1. Have clear authority, responsibility, and accountability for all acquisition functions and programs within the DoD Component as provided for in this Directive and for enforcing the procedures established by the Under Secretary of Defense for Acquisition.

2. Review and provide their assessment of any changes reported in individual major defense acquisition programs, the significance of problems reported by the Program Manager, the Program Manager's

proposed action plans, and the level of risk associated with such plans.

3. For executive agencies as defined by Section 4 of the "Office of Federal Procurement Policy Act," Public Law 93-400, as amended, (Title 41, United States Code, Section 403), are the Senior Procurement Executive established pursuant to Section 16 of the "Office of Federal Procurement Policy Act" (Title 41, United States Code, Section 414) (reference (o)).

4. Serve as principal advisor to the DoD Component Heads on all matters relating to acquisition management within their respective DoD Components to include resource allocation decisions.

5. Actively participate in the selection and evaluation of Program Executive Officers and Program Managers for major defense acquisition programs.

J. Program Executive Officers and Program Managers have authority, responsibility, and accountability for managing their assigned programs in a manner that is consistent with this Directive and DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures" (reference (d)).

1. Program Executive Officers review and provide their assessment of any changes reported in assigned individual programs, the significance of problems reported by the Program Manager, the Program Manager's proposed action plans, and the level of risk associated with such plans.

2. Program Managers provide assessments of program status and risk in all briefings and presentations to higher authorities, actively manage contract performance, and provide assessment of contractor performance.

K. The Assistant Secretary of Defense for Program Analysis and Evaluation, through the Cost Analysis Improvement Group:

1. Provides independent cost estimates in support of the Defense Acquisition Board review process (Title 10, United States Code, Section 2434, "Independent cost estimates; operational manpower requirements" (reference (p))).

2. Performs the specific responsibilities established in DoD Directive 5000.4, "OSD Cost Analysis Improvement Group" (reference (q)).

L. The Director of Defense Research and Engineering provides technical expertise, oversight, and support to all elements of the DoD acquisition system.

PART 4

REFERENCES, continued

(e) DoD Directive 3150.1, "Joint Nuclear Weapons Development Studies and Engineering Projects," December 27, 1983

(f) DoD 5200.1-R, "Information Security Program Regulation," June 1986, with Change No. 1, June 27, 1988, authorized by DoD Directive 5200.1, June 7, 1982

(g) DoD Directive O-5205.7, "Special Access Program (SAP) Policy," January 4, 1989

(h) Federal Acquisition Regulation, Subpart 7.1, "Acquisition Plans"

(i) Defense Federal Acquisition Regulation Supplement, Subpart 207.1, "Acquisition Plans"

(j) Office of Management and Budget Circular A-109, "Major System Acquisitions," April 5, 1976

(k) DoD Directive 7045.14, "The Planning, Programing, and Budgeting System (PPBS)," May 22,1984

(l) DoD Instruction 7045.7, "Implementation of the Planning, Programing, and Budgeting System (PPBS)," May 23, 1984

(m) DoD Directive 5134.1, "Under Secretary of Defense (Acquisition)," August 8, 1989

(n) DoD Directive 5000.49, "Defense Acquisition Board," September 11, 1989

(o) Public Law 93-400, "Office of Federal Procurement Policy Act," August 30, 1974, as amended, (Title 41, United States Code, Section 401-424)

(p) Title 10, United States Code, Section 2434, "Independent cost estimates; operational manpower requirements"

(q) DoD Directive 5000.4, "OSD Cost Analysis Improvement Group," October 30, 1980

PART 5

CANCELLATIONS

The following additional documents are hereby canceled by this Directive:

(r) Deputy Secretary of Defense Policy Memorandum, "Computer-Aided Acquisition and Logistics Support," August 5, 1988

(s) DoD Directive 3224.1, "Engineering for Transportability," November 29, 1977

(t) DoD Instruction 3235.1, "Test and Evaluation of System Reliability, Availability and Maintainability," February 1, 1982

(u) DoD Directive 3405.2, "Use of Ada® in Weapon Systems," March 30, 1987

(v) DoD Instruction 4000.26, "Post Production Support," August 19, 1986

(w) DoD Directive 4005.16, "Diminishing Manufacturing Sources and Material Shortages Program," May 16, 1984

(x) DoD Directive 4105.62, "Selection of Contractual Sources for Major Defense Systems," September 9, 1985

(y) DoD Directive 4120.3, "Defense Standardization and Specification Program," February 10, 1979

(z) DoD Directive 4120.18, "DoD Metrication Program," September 16, 1987

(aa) DoD Instruction 4120.19, "DoD Parts Control Program," July 6, 1989

(bb) DoD Directive 4120.20, "Development and Use of Non-Government Standards," March 28, 1988

(cc) DoD Directive 4140.40, "Provisioning of End Items of Materiel," June 28, 1983

(dd) DoD Directive 4140.43, "Fuel Standardization," March 11, 1988

(ee) DoD Instruction 4151.9, "DoD Technical Manual Program Management," January 3, 1989

(ff) DoD Directive 4155.1, "Quality Program," August 10, 1978

(gg) DoD Directive 4245.3, "Design to Cost," April 6, 1983

(hh) DoD Directive 4245.4, "Acquisition of Nuclear Survivable Systems," July 25, 1988

(ii) DoD Directive 4245.6, "Defense Production Management," January 19, 1984

(jj) DoD Directive 4245.7, "Transition from Development to Production," January 19, 1984

(kk) DoD Directive 4245.8, "DoD Value Engineering Program," November 19, 1986

(ll) DoD Directive 4245.9, "Competitive Acquisitions," August 17, 1984

(mm) DoD Instruction 4245.12, "Spares Acquisition Integrated with Production (SAIP)," June 8, 1987

(nn) DoD Instruction 4245.13, "Design and Acquisition of Nuclear, Biological and Chemical (NBC) Contamination-Survivable Systems," June 15, 1987

(oo) DoD Directive 4600.3, "Electronic Counter-Countermeasures (ECCM) Policy," March 12, 1990

(pp) DoD Instruction 4630.7, "Electrical Power Modernization Program for Critical Command, Control, and Communications Facilities," December 28, 1984

(qq) DoD Directive 4640.11, "Mandatory Use of Military Telecommunications Standards in the MIL-STD-188 Series," December 21, 1987

(rr) DoD Directive 5000.3, "Test and Evaluation," March 12, 1986

(ss) DoD 5000.3-M-1, "Test and Evaluation Master Plan Guidelines," January 1990

(tt) DoD 5000.3-M-3, "Software Test and Evaluation Manual," November 1987

(uu) DoD 5000.3-M-6, "Threat Simulator Program Policy and Procedures," April 1989

(vv) DoD Directive 5000.29, "Management of Computer Resources in Major Defense Systems," April 26, 1976

(ww) DoD Instruction 5000.36, "System Safety Engineering and Management," April 14, 1986

(xx) DoD Directive 5000.37, "Acquisition and Distribution of Commercial Products (ADCP)," September 29, 1978

(yy) DoD Directive 5000.38, "Production Readiness Reviews," January 24, 1979

(zz) DoD Directive 5000.39, "Acquisition and Management of Integrated Logistic Support for Systems and Equipment," November 17, 1983

(aaa) DoD Directive 5000.40, "Reliability and Maintainability," July 8, 1980

(bbb) DoD Directive 5000.43, "Acquisition Streamlining," January 15, 1986

(ccc) DoD Directive 5000.45, "Baselining of Selected Major Systems," August 25, 1986

(ddd) DoD Instruction 5000.50, "Defense Acquisition Executive Summary," March 23, 1989

(eee) DoD Directive 5000.53, "Manpower, Personnel, Training, and Safety (MPTS) in the Defense System Acquisition Process," December 30, 1988

(fff) DoD Instruction 5010.12, "DoD Technical Data Management Program," January 23, 1989

(ggg) DoD Directive 5010.19, "DoD Configuration Management Program," October 28, 1987

(hhh) DoD Directive 5010.20, "Work Breakdown Structures for Defense Materiel Items," July 31, 1968

(iii) DoD Directive 5160.51, "Precise Time and Time Interval -- Planning, Coordination and Control," June 14, 1985

(jjj) DoD Instruction 7000.2, "Performance Measurement for Selected Acquisitions," June 10, 1977

(kkk) DoD Instruction 7000.3, "Selected Acquisition Reports," June 15, 1989

(lll) DoD Instruction 7000.10, "Contract Cost Performance, Funds Status and Cost/Schedule Status Reports," December 3, 1979

(mmm) DoD Directive 7000.11, "Contractor Cost Data Reporting," March 27, 1984

(nnn) DoD Instruction 7220.31, "Unit Cost Reports," July 8, 1987

(ooo) Baselining Guidance, Attachment 1, to Under Secretary of Defense for Acquisition Memorandum, "Approval of Major Program Baselines," February 9, 1988

(ppp) Baselining Guidance, Attachment 1, to Under Secretary of Defense for Acquisition Memorandum, "Approval of Major Program Baselines," February 17, 1988

(qqq) Baselining Guidance, Attachment 1, to Under Secretary of Defense for Acquisition Memorandum, "Approval of Major Program Baselines," February 26, 1988

(rrr) Under Secretary of Defense for Acquisition Memorandum, "Major Programs - Competitive Alternative Sources," April 28, 1988

(sss) Under Secretary of Defense for Acquisition Memorandum, "Under Secretary of Defense for Acquisition Approval of Certain Fixed Price Type Contracts," September 25, 1989

(ttt) Under Secretary of Defense for Acquisition Memorandum, "Baseline Policy and Selected Acquisition Report (SAR) Submission," October 30, 1989

(uuu) Under Secretary of Defense for Acquisition Memorandum, "Structuring DAB Meetings," December 5, 1989

(vvv) Under Secretary of Defense for Acquisition Memorandum, "Defense Acquisition Board (DAB) Milestone Reviews," February 21, 1990

(www) Under Secretary of Defense for Acquisition Memorandum, "Implementation of Pre-DAB Review Streamlining Measures," February 22, 1990

(xxx) Under Secretary of Defense for Acquisition Memorandum, "Cooperative Opportunities Documents," May 21, 1990

(yyy) Under Secretary of Defense for Acquisition Memorandum, "Baseline Policy," May 30, 1990

(zzz) (Under Secretary of Defense for Acquisition Memorandum, "Production of Naval Vessels and Military Satellite Programs," May 30, 1990

(aaaa) Under Secretary of Defense for Acquisition Memorandum, "Dual Sourcing in Defense Production," June 8, 1990

(bbbb) Under Secretary of Defense for Acquisition Memorandum, "Protecting the U.S. Technical Lead in Systems Acquisition," June 13, 1990

APPENDIX B
DODI 5000.2, PART 15 "DEFINITIONS"

B. DODI 5000.2 PART 15 "DEFINITIONS"

Acquisition Categories (ACATs). Categories established to facilitate decentralized decisionmaking and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures.

Acquisition Decision Memorandum (ADM). A memorandum signed by the milestone decision authority that documents decisions made and the exit criteria established as the result of a milestone decision review or in–process review.

Acquisition Plan (AP). A formal written document reflecting the specific actions necessary to execute the approach established in the approved acquisition strategy and guiding contractual implementation. (See Federal Acquisition Regulation Subpart 7.1 and Defense Federal Acquisition Regulation Supplement Subpart 207.1).

Acquisition Planning. The process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the need in a timely manner and at a reasonable cost. It is performed throughout the life–cycle and includes developing an overall acquisition strategy for managing the acquisition and a written acquisition plan.

Acquisition Program. A directed, funded effort that is designed to provide a new or improved materiel capability in response to a validated need.

Acquisition Strategy (AS). A business and technical management approach designed to achieve program objectives within the resource constraints imposed. It is the framework for planning, directing, and managing a program. It provides a master schedule for research, development, test, production, fielding, and other activities essential for program success, and, is the basis for formulating functional plans and strategies (e.g., Test and Evaluation Master Plan, Acquisition Plan, competition, prototyping, etc.).

Acquisition Strategy Report (ASR). Describes the acquisition approach to include streamlining, sources, competition, and contract types throughout the period from the beginning of Phase I, Demonstration and Validation, through the end of production.

Acquisition Streamlining. Any effort that results in more efficient and effective use of resources to develop or produce quality systems. This includes ensuring that only necessary and cost–effective requirements are included, at the most appropriate time in the acquisition cycle, in solicitations and resulting contracts for the design, development, and production of new systems, or for modifications to existing systems that involve redesign of systems or subsystems.

Affordability. A determination that the life–cycle cost of an acquisition program is in consenence with the long range investment and force structure plans of the Department of Defense or individual DoD Components.

Agency–Acquisition Executive. See DoD Component Acquisition Executive.

Availability. A measure of the degree to which an item is in the operable and committable state at the start of a mission when the mission is called for at an unknown (random) time.

Capstone Test and Evaluation Master Plan (Capstone TEMP): A Test and Evaluation Master Plan which addresses the testing and evaluation of a defense system comprised of a collection of "stand alone" component systems which function collectively to achieve the objectives of the defense system.

Component Acquisition Executive. See DoD Component Acquisition Executive.

Computer Resources. The totality of computer hardware, firmware, software, personnel, documentation, supplies, services, and support services applied to a given effort.

Computer Software (or Software). A combination of associated computer instructions and computer data definitions required to enable the computer hardware to perform computational or control functions.

Computer Software Documentation. Technical data or information, including computer listings and printouts, which documents the requirements, design, or details of computer software, explains the capabilities and limitations of the software, or provides operation instructions for using or supporting computer software during the software's operational life.

Configuration. A collection of an item's descriptive and governing characteristics, which can be expressed (a) in functional terms (i.e., what performance the item is expected to achieve); and (b) in physical terms (i.e., what the item should look like and consist of when it is built).

Configuration Item (CI). An aggregation of hardware, firmware, or computer software or any of their discrete portions, which satisfies an end use function and is designated by the Government for separate configuration management. Configuration items may vary widely in complexity, size, and type, from an aircraft, electronic, or ship system to a test meter or round of ammunition. Any item required for logistic support and designated for separate procurement is a configuration item.

Configuration Management. The technical and administrative direction and surveillance actions taken to identify and document the functional and physical characteristics of a configuration item; to control changes to a configuration item and its characteristics; and, to record and report change processing and implementation status.

Constant Year Dollars. A method of relating dollars in several years by removing the effects of inflation and showing all dollars at the value they would have in a selected base year.

Contract Data Requirements List (CDRL). A list of data requirements that are authorized for a specific acquisition and made a part of the contract.

Contractual Data Requirement. A requirement, identified in a solicitation and imposed in a contract or order, that addresses any aspect of data (i.e., that portion of contractual tasking requirement associated with the development, generation, preparation, modification, maintenance, storage, retrieval, and/or delivery of data).

Cost Effectiveness. A measure of the operational capability added by a system as a function of its life-cycle cost.

Cost and Operational Effectiveness Analysis (COEA). An analysis of the estimated costs and operational effectiveness of alternative materiel systems to meet a mission need and the associated program for acquiring each alternative.

Critical Design Review (CDR). A review conducted to determine that the detailed design satisfies the performance and engineering requirements of the development specification; to establish the detailed design compatibility among the item and other items of equipment, facilities, computer programs, and personnel; to assess producibility and risk areas; and to review the preliminary product specifications. Conducted during Phase I, Demonstration and Validation (for prototypes) and Phase II, Engineering and Manufacturing Development.

Critical Intelligence Parameter. A threat capability or threshold established by the program, changes to which could critically impact on the effectiveness and survivability of the proposed system.

Critical Operational Issue. A key operational effectiveness or operational suitability issue that must be examined in operational test and evaluation to determine the system's capability to perform its mission. A critical operational issue is normally phrased as a question to be answered in evaluating a system's operational effectiveness and/or operational suitability.

Defense Acquisition Board (DAB). The senior DoD acquisition review board chaired by the Under Secretary of Defense (Acquisition). The Vice Chairman, Joint Chiefs of Staff is the Vice-Chair. Other members of the Board are the Deputy Under Secretary of Defense (Acquisition), Service Acquisition Executives of the Army, Navy, and Air Force; the Director, Defense Research and Engineering; the Assistant Secretary of Defense (Program Analysis and Evaluation); the Comptroller of the DoD; the Director, Operational Test and Evaluation; the appropriate DAB Committee Chair; and the DAB Executive Secretary. Other persons may attend at the invitation of the Chair, (see DoD Directive 5000.49, "Defense Acquisition Board").

Defense Acquisition Board Committee. Advisory review groups subordinate to the DAB. The number of Committees is determined by the USD(A). The purpose of the Committee is to review DoD Component programs prior to a DAB review in order to make an independent assessment and recommendation to the Board regarding the program. (See DoD Directive 5000.49, "Defense Acquisition Board").

Defense Planning and Resources Board (DPRB). A board, chaired by the Deputy Secretary of Defense, established to facilitate decisionmaking during all phases of the planning, programming, and budgeting system process. Board members include the Secretaries of the Military Departments, the Chairman of the Joint Chiefs of Staff, the Under Secretaries of Defense for Acquisition and Policy, the Assistant Secretary of Defense (Program Analysis and Evaluation), and the Comptroller of the DoD.

Department of Defense Acquisition System. A single uniform system whereby all equipment, facilities, and services are planned, designed, developed, acquired, maintained, and disposed of within the DoD. The system encompasses establishing and enforcing policies and practices that govern acquisitions, to include documenting mission needs and establishing performance goals and

baselines; determining and prioritizing resource requirements for acquisition programs; planning and executing acquisition programs; directing and controlling the acquisition review process; developing and assessing logistics implications; contracting; monitoring the execution status of approved programs; and reporting to Congress. (See DoD Directive 5134.1, "Under Secretary of Defense (Acquisition)").

Design Control Activity. A contractor or Government activity having responsibility for the design of a given part and for the preparation and currency of engineering drawings and other technical data for that part.

DoD Components. The Office of the Secretary of Defense; the Military Departments; the Chairman, Joint Chiefs of Staff and Joint Staff; the Unified and Specified Commands; the Defense Agencies; and DoD Field Activities.

DoD Component Acquisition Executive. A single official within a DoD Component who is responsible for all acquisition functions within that Component. This includes Service Acquisition Executives for the Military Departments and Acquisition Executives in other DoD Components who have acquisition management responsibilities.

Early Operational Assessment. An operational assessment conducted prior to, or in support of, Milestone II.

Environment. Used as a general reference, environment includes the generic natural environment, e.g., weather, climate, ocean conditions, terrain, vegetation, etc. Modified, environment can refer to specific induced environments, e.g., "dirty" battlefield environment, nuclear–chemical–biological environment, etc. Environment includes those conditions observed by the system during operational use, standby, maintenance, transportation, and storage.

Evaluation Criteria. Standards by which accomplishments of required technical and operational effectiveness and/or suitability characteristics or resolution of operational issues may be assessed.

Exit Criteria. Program specific accomplishments that must be satisfactorily demonstrated before an effort or program can progress further in the current acquisition phase or transition to the next acquisition phase. Exit criteria may include such factors as critical test issues, the attainment of projected growth curves and baseline parameters, and the results of risk reduction efforts deemed critical to the decision to proceed further. Exit criteria supplement minimum required accomplishments and are specific to each acquisition phase.

Firmware. Hard–wired computer logic for performing computer functions previously or normally performed by software.

Follow–On Operational Test and Evaluation (FOT&E). That test and evaluation that is necessary during and after the production period to refine the estimates made during operational test and evaluation, to evaluate changes, and to reevaluate the system to ensure that it continues to meet operational needs and retains its effectiveness in a new environment or against a new threat.

Full Rate Production. Production of economic quantities following stabilization of the system design and prove-out of the production process.

Highly Sensitive Classified Program. An acquisition special access program established in accordance with DoD 5200.1-R, "Information Security Program Regulation" (reference (e)), and managed in accordance with DoD Directive O-5205.7, "Special Access Program Policy" (reference (f)).

Human Factors. A body of scientific facts about human characteristics. The term covers all biomedical and psychosocial considerations; it includes, but is not limited to, principles and applications in the areas of human engineering, personnel selection, training, life support, job performance aids, and human performance evaluation.

Human Performance. The ability of actual users and maintainers to meet the system's performance standards, including reliability and maintainability, under the conditions in which the system will be employed.

Implementation. The publication of directives, instructions, regulations, and related documents that define responsibilities and authorities and establish the internal management processes necessary to implement the policies or procedures of a higher authority.

Independent Cost Analysis (ICA). An analysis of program cost estimates conducted by an impartial body disassociated from the management of the program. (See Title 10, United States Code, Section 2434, "Independent Cost Estimates; Operational Manpower Requirements").

Independent Cost Estimate (ICE). An estimate of the cost for goods and/or for services to be procured by contract by someone outside the chain of authority responsible for the contract or for acquiring the goods or services.

Industrial Base. That part of the total privately owned and Government-owned industrial production and depot level equipment and maintenance capacity in the United States and its territories and possessions, as well as capacity located in Canada, that is or shall be made available in an emergency for the manufacture of items required by the U.S. Military Services and selected Allies.

Industrial Mobilization. The process of marshalling the industrial sector to provide goods and services, including construction, required to support military operations and the needs of the civil sector during domestic or national emergencies. It includes the mobilization of materials, labor, capital, facilities, and contributory items and services. Mobilization activities may result in some disruption to the national economy.

Initial Operational Capability (IOC). The first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics, and which is manned or operated by a trained, equipped, and supported military unit or force.

Initial Operational Test and Evaluation (IOT&E). All operational test and evaluation conducted on production representative articles, to support the decision to proceed beyond low-rate initial

production. It is conducted to provide a valid estimate of expected system operational effectiveness and operational suitability.

Integrated Logistics Support (ILS). A disciplined, unified, and iterative approach to the management and technical activities necessary to integrate support considerations into system and equipment design; develop support requirements that are related consistently to readiness objectives, to design, and to each other; acquire the required support; and provide the required support during the operational phase at minimum cost.

ILS Elements:

Maintenance Planning. The process conducted to evolve and establish maintenance concepts and requirements for the lifetime of a materiel system.

Manpower and Personnel. The identification and acquisition of military and civilian personnel with the skills and grades required to operate and support a materiel system over its lifetime at peacetime and wartime rates.

Supply Support. All management actions, procedures, and techniques used to determine requirements to acquire, catalog, receive, store, transfer, issue, and dispose of secondary items. This includes provisioning for initial support as well as replenishment supply support.

Support Equipment. All equipment (mobile or fixed) required to support the operation and maintenance of a materiel system. This includes associated multi–use end items, ground–handling and maintenance equipment, tools, metrology and calibration equipment, test equipment, and automatic test equipment. It includes the acquisition of logistics support for the support and test equipment itself.

Technical Data. Recorded information regardless of form or character (such as manuals and drawings) of a scientific or technical nature. Computer programs and related software are NOT technical data; documentation of computer programs and related software are. Also excluded are financial data or other information related to contract administration.

Training and Training Support. The processes, procedures, techniques, training devices, and equipment used to train civilian and active duty and reserve military personnel to operate and support a materiel system. This includes individual and crew training; new equipment training; initial, formal, and on–the–job training; and logistic support planning for training equipment and training device acquisitions and installations.

Computer Resources Support. The facilities, hardware, software, documentation, manpower, and personnel needed to operate and support embedded computer systems.

Facilities. The permanent, or semipermanent, or temporary real property assets required to support the materiel system, including conducting studies to define types of

facilities or facility improvements, locations, space needs, utilities, environmental requirements, real estate requirements, and equipment.

Packaging, Handling, Storage, and Transportation. The resources, processes, procedures, design considerations, and methods to ensure that all system, equipment,and support items are preserved, packaged, handled, and transported properly, including environmental considerations, equipment preservation requirements for short- and long-term storage, and transportability.

Design Interface. The relationship of logistics-related design parameters, such as reliability and maintainability, to readiness and support resource requirements. These logistics-related design parameters are expressed in operational terms rather than inherent values and specifically related to system readiness objectives and support costs of the materiel system.

Integrated Program Assessment (IPA). A document prepared by the supporting staff or review forum of the milestone decision authority to support Milestone I, II, III, and IV reviews. It provides an independent assessment of a program's status and readiness to proceed into the next phase of the acquisition cycle.

Integrated Program Summary (IPS). A DoD Component document prepared and submitted to the milestone decision authority in support of Milestone I, II, III, and IV reviews. It succinctly highlights the status of a program and its readiness to proceed into the next phase of the acquisition cycle.

Intelligence Report. A report provided by the appropriate intelligence agency/command to the milestone decision authority prior to each milestone review. For Milestone 0 the report will confirm the validity of the threat contained in the Mission Need Statement. For Milestones I-IV the report will confirm the validation of the system threat assessment used in support of the program and will address any threat issues or unresolved threat concerns affecting the program.

Interoperability. The ability of systems, units, or forces to provide services to, or accept services from, other systems, units, or forces and to use the services so exchanged to operate effectively together.

Joint Requirements Oversight Council (JROC). A Council, chaired by the Vice Chairman, Joint Chiefs of Staff, that conducts requirements analyses, determines the validity of mission needs and develops recommended joint priorities for those needs it approves, and validates performance objectives and thresholds in support of the Defense Acquisition Board. Council members include the Vice Chiefs of the Army, Navy,and Air Force, and the Assistant Commandant of the Marine Corps. (See MCM-178-90, Charter of the Joint Requirements Oversight Council.)

Joint Program. Any Defense acquisition system, subsystem, component, or technology program that involves formal management or funding by more than one DoD Component during any phase of a system's life-cycle.

Life-Cycle Cost. The total cost to the Government of acquisition and ownership of that system over its useful life. It includes the cost of development, acquisition, support and, where applicable, disposal.

Logistics Supportability. The degree to which planned logistics support (including test, measurement, and diagnostic equipment; spares and repair parts; technical data; support facilities; transportation requirements; training; manpower; and software support) allows meeting system availability and wartime usage requirements.

Logistics Support Analysis (LSA). The selective application of scientific and engineering efforts undertaken during the acquisition process, as part of the systems engineering process, to assist in causing support considerations to: influence design; define support requirements that are related optimally to design and to each other; acquire the required support; and provide the required support during the operational phase at minimum cost.

Low–Rate Initial Production (LRIP). The production of a system in limited quantity to provide articles for operational test and evaluation, to establish an initial production base, and to permit an orderly increase in the production rate sufficient to lead to full–rate production upon successful completion of operational testing.

Maintainability. The ability of an item to be retained in, or restored to a specified condition when maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair.

Major Defense Acquisition Program. An acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and that is:

a. Designated by the USD(A) as a major defense acquisition program, or

b. Estimated by the USD(A) to require:

   (1) An eventual total expenditure for research, development, test, and evaluation of more than $200 million in fiscal year 1980 constant dollars (approximately $300 million in fiscal year 1990 constant dollars), or

   (2) An eventual total expenditure for procurement of more than $1 billion in fiscal year 1980 constant dollars (approximately $1.8 billion in fiscal year 1990 constant dollars).

Major System. A combination of elements that will function together to produce the capabilities required to fulfill a mission need, including hardware, equipment, software, or any combination thereof, but excluding construction or other improvements to real property. A system shall be considered a major system if it is estimated by the USD(A) to require:

a. An eventual total expenditure for research, development, test, and evaluation of more than $75 million in fiscal year 1980 constant dollars (approximately $115 million in fiscal year 1990 constant dollars), or

b. An eventual total expenditure for procurement of more than $300 million in fiscal year 1980 constant dollars (approximately $540 million in fiscal year 1990 constant dollars)

Manufacturing. The process of making an item by hand, or, especially, by machinery, often on a large scale and with division of labor.

Metric System of Measurement. As used herein, the term means the International System of Units (or SI from the French "Le Systeme International d'Unites") as established by the General Conference on Weights and Measures in 1960, and as interpreted or modified for the United States by the Secretary of Commerce. The terms metric, metric system, and metric units are used interchangeably with the term SI.

Minimum Acceptable Operational Requirement. The value for a particular parameter that is required to provide a system capability that will satisfy the validated mission need. Also known as the performance threshold.

Minimum Required Accomplishments. Necessary tasks that must be completed during an acquisition phase prior to the next milestone decision review. Applies to all acquisition categories and highly sensitive classified programs.

Mission Critical System. A system whose operational effectiveness and operational suitability are essential to successful completion or to aggregate residual combat capability. If this system fails, the mission likely will not be completed. Such a system can be an auxiliary or supporting system, as well as a primary mission system.

Mission Need Statement (MNS). A statement of operational capability required to perform an assigned mission or to correct a deficiency in existing capability to perform the mission.

Mission Reliability. The probability that the system will perform mission essential functions for a period of time under the conditions stated in the mission profile.

Model. A representation of an actual or conceptual system that involves mathematics, logical expressions, or computer simulations that can be used to predict how the system might perform or survive under various conditions or in a range of hostile environments.

Nuclear, Biological, and Chemical Contamination. The deposit and/or absorption of residual radioactive material or biological, or chemical agents on or by structures, areas, personnel, or objects.

> *Nuclear (N) Contamination.* Residual radioactive material resulting from fallout, rainout, and residual radiation from a system produced by a nuclear explosion (e.g., nuclear indirect gamma activity (NIGA)), and persisting longer than one minute after burst.
>
> *Biological (B) Contamination.* Microorganisms and toxins that cause disease in man, plants, or animals or cause the deterioration of materiel.
>
> *Chemical (C) Contamination.* Chemical substances intended for use in military operations to kill, seriously injure, incapacitate, or temporarily irritate or disable man through their physiological effects.

Nonmajor Defense Acquisition Program. A program other than a major defense acquisition program or a highly sensitive classified program.

Nuclear, Biological, and Chemical Contamination Survivability. The capability of a system (and its crew) to withstand a Nuclear, Biological, and Chemical contaminated environment and relevant decontamination without losing the ability to accomplish the assigned mission. A Nuclear, Biological, and Chemical contamination survivable system is hardened against Nuclear, Biological, and Chemical contamination and decontaminants; it can be decontaminated, and is compatible with individual protective equipment.

> *Hardness.* The capability of materiel to withstand the materiel–damaging effects of Nuclear, Biological, and Chemical contamination and relevant decontaminants.
>
> *Decontamination.* The process of making personnel and materiel safe by absorbing, destroying, neutralizing, making harmless, or removing chemical or biological agents, or by removing radioactive material clinging to or around it.
>
> *Compatibility.* The capability of a system to be operated, maintained, and resupplied by persons wearing a full complement of individual protective equipment, in all climates for which the system is designed, and for the period specified in the operational requirements document.

Negligible Contamination Level. That level of Nuclear, Biological, and Chemical contamination that would not produce militarily significant effects in previously unexposed and unprotected persons operating or maintaining the system.

Nondevelopmental Item (NDI):

> Any item of supply that is available in the commercial marketplace;
>
> Any previously developed item of supply that is in use by a department or agency of the United States, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;
>
> Any item of supply described above, that requires only minor modification in order to meet the requirements of the procuring agency; or
>
> Any item of supply that is currently being produced that does not meet the definitions above, solely because the item is not yet in use or is not yet available in the commercial marketplace.

Nuclear Hardness. A quantitative description of the resistance of a system or component to malfunction (temporary and permanent) and/or degraded performance induced by a nuclear weapon environment. Hardness is measured by resistance to physical quantities such as overpressure, peak velocities, energy absorbed, and electrical stress. Hardness is achieved through adhering to appropriate design specifications and is verified by one or more test and analysis techniques.

Nuclear Survivability. The capability of a system to operate during and/or after exposure to a nuclear environment. Survivability may be achieved by a number of methods, including proliferation, redundancy, avoidance, reconstitution, deception, and hardening.

Nuclear Survivability Characteristics. A quantitative description of the system features needed to meet its survivability requirements. Such system features include those design, performance, and operational capabilities used to limit or avoid the hostile environment, architectures which minimize the impact of localized damage to the larger wartime mission, as well as physical hardening to environment levels which cannot be mitigated otherwise.

Operational Assessment. An evaluation of operational effectiveness and operational suitability made by an independent operational test activity, with user support as required, on other than production systems. The focus of an operational assessment is on significant trends noted in development efforts, programmatic voids, areas of risk, adequacy of requirements, and the ability of the program to support adequate operational testing. Operational assessments may be made at any time using technology demonstrators, prototypes, mockups, engineering development models, or simulations but will not substitute for the independent operational test and evaluation necessary to support full production decisions.

Operational Effectiveness. The overall degree of mission accomplishment of a system when used by representative personnel in the environment planned or expected (e.g., natural, electronic, threat, etc.) for operational employment of the system considering organization, doctrine, tactics, survivability, vulnerability, and threat (including countermeasures, initial nuclear weapons effects, nuclear, biological, and chemical contamination (NBCC) threats).

Operational Reliability and Maintainability Value. Any measure of reliability or maintainability that includes the combined effects of item design, quality, installation, environment, operation, maintenance, and repair.

Operational Suitability. The degree to which a system can be placed satisfactorily in field use with consideration given to availability, compatibility, transportability, interoperability, reliability, wartime usage rates, maintainability, safety, human factors, manpower supportability, logistics supportability, natural environment effects and impacts, documentation, and training requirements.

Performance. Those operational and support characteristics of the system which allow it to effectively and efficiently perform its assigned mission over time. The support characteristics of the system include both supportability aspects of the design and the support elements necessary for system operation.

Post-Production Support. Systems management and support activities necessary to ensure continued attainment of system readiness objectives with economical logistics support after cessation of production of the end item (weapon system or equipment).

Post-Deployment Software Support (PDSS). Those software support activities that occur during the deployment phase of the system life-cycle.

Preliminary Design Review (PDR). A review conducted on each configuration item to evaluate the progress, technical adequacy, and risk resolution of the selected design approach; to determine

its compatibility with performance and engineering requirements of the development specification; and to establish the existence and compatibility of the physical and functional interfaces among the item and other items of equipment, facilities, computer programs, and personnel. Conducted during Phase I, Demonstration and Validation (for prototypes), and Phase II, Engineering and Manufacturing Development.

Prime Contractor. A contractor having responsibility for design control and delivery of a system or equipment such as aircraft, engines, ships, tanks, vehicles, guns and missiles, ground communications and electronic systems, ground support equipment, and test equipment.

Producibility. The relative ease of manufacturing an item or system. This relative ease is governed by the characteristics and features of a design that enable economical fabrication, assembly, inspection, and testing using available manufacturing techniques.

Production Planning. The broad range of activities initiated early in the acquisition process, and continued through a production decision, to ensure an orderly transition from development to cost–effective rate production or construction.

Production Readiness. The state, condition, or preparedness of a system to proceed into production. A system is ready for production when the producibility of the production design and the managerial and physical preparations necessary for initiating and sustaining a viable production effort have progressed to the point where a production commitment can be made without incurring unacceptable risks that will breach thresholds of schedule, performance, cost, or other established criteria.

Program Executive Officers (PEOs). Military or civilian officials who have primary responsibility for directing several acquisition category I programs and for assigned acquisition category II, III, and IV programs. They have no other command or staff responsibilities within their respective Components and only report to and receive guidance and direction from their DoD Component Acquisition Executive.

Program Managers (PMs). Military or civilian officials who are responsible for managing an acquisition program.

Reliability. The ability of a system and its parts to perform its mission without failure, degradation, or demand on the support system.

Repair Parts. Consumables items; that is, individual parts or nonrepairable assemblies, required for the repair of spare parts or major end items.

Risk. A subjective assessment made regarding the likelihood or probability of not achieving a specific objective by the time established with the resources provided or requested. It also refers to overall program risk.

Risk Management. All actions taken to identify, assess, and eliminate or reduce risk to an acceptable level of selected areas (e.g., cost, schedule, technical, producibility, etc.) and the total program.

Robust Design. The design of a system such that its performance is insensitive to variations during its manufacturing, or in its operational environment (including maintenance, transportation, and storage), and the system continues to perform acceptably throughout its life–cycle despite component drift or aging.

Senior Procurement Executive (SPE). The senior official responsible for management direction of the Service procurement system, including implementation of unique procurement policies, regulations and standards (see Title 41, United States Code, Section414, "Executive Agency Responsibilities"). The Senior Procurement Executive for all non–Service DoD Components is the Under Secretary of Defense (Acquisition) (see Title 10, United States Code, Section 133, "Under Secretary of Defense for Acquisition").

Service Acquisition Executive (SAE). See definition for DoD Component Acquisition Executive.

Simulation. A simulation is a method for implementing a model. It is the process of conducting experiments with a model for the purpose of understanding the behavior of the system modeled under selected conditions or of evaluating various strategies for the operation of the system within the limits imposed by developmental or operational criteria. Simulation may include the use of analog or digital devices, laboratory models, or "testbed" sites. Simulations are usually programmed for solution on a computer; however, in the broadest sense, military exercises and wargames are also simulations.

Simulator. A generic term used to describe a family of equipment used to represent threat weapon systems in development testing, operational testing, and training. A threat simulator has one or more characteristics which, when detected by human senses or man–made sensors, provide the appearance of an actual threat weapon system with a prescribed degree of fidelity.

Software Support. The sum of all activities that take place to ensure that implemented and fielded software continues to fully support the operational mission of the system. Software support includes pre–deployment software support and post–deployment software support.

Spare Parts. Repairable components or assemblies used for maintenance replacement purposes in major end items of equipment.

Spares. A term used to denote both spare and repair parts.

Spares Acquisition Integrated with Production (SAIP). A procedure used to combine procurement of selected spares with procurement of identical items produced for installation on the primary system, subsystem or equipment.

Supplementation. The publication of directives, instructions, regulations, and related documents that add to, restrict, or otherwise modify the policies or procedures of a higher authority.

Supportability. The degree to which system design characteristics and planned logistics resources, including manpower, meet system peacetime readiness and wartime utilization requirements.

Surge. An increase in the production or repair of defense goods of limited duration.

Survivability. The capability of a system to avoid or withstand man–made hostile environments without suffering an abortive impairment of its ability to accomplish its designated mission.

Susceptibility. The degree to which a device, equipment, or weapon system is open to effective attack due to one or more inherent weakness. Susceptibility is a function of operational tactics, countermeasures, probability of enemy fielding a threat, etc. Susceptibility is considered a subset of survivability.

System Readiness Objective. A criterion for assessing the ability of a system to undertake and sustain a specified set of missions at planned peacetime and wartime utilization rates. System readiness measures take explicit account of the effects of reliability and maintainability system design, the characteristics and performance of the support system, and the quantity and location of support resources. Examples of system readiness measures are combat sortie rate over time, peacetime mission capable rate, operational availability, and asset ready rate.

System Reliability, and Maintainability Parameter. A measure of reliability or maintainability in which the units of measurement are directly related to operational readiness, mission success, maintenance manpower cost, or logistic support cost.

System Safety. The application of engineering and management principles, criteria, and techniques to optimize safety within the constraints of operational effectiveness, time, and cost throughout all phases of the system life–cycle.

System Threat Assessment. Describes the threat to be countered and the projected threat environment. The threat information should reference DIA or Service Technical Intelligence Center approved documents.

Technical Data. Scientific or technical information recorded in any form or medium (such as manuals and drawings). Computer programs and related software are not technical data; documentation of computer programs and related software are. Also excluded are financial data or other information related to contract administration.

Technical Data Package (TDP). A technical description of an item adequate for supporting an acquisition strategy, production, engineering, and logistics support. The description defines the required design configuration and procedures to ensure adequacy of item performance. It consists of all applicable technical data such drawings, associated lists, specifications, standards, performance requirements, quality assurance provisions, and packaging details.

Technical Manual (TM). A publication that contains instructions for the installation, operation, maintenance, training, and support of weapon systems, weapon system components, and support equipment. TM information may be presented in any form or characteristic, including but not limited to hard copy, audio and visual displays, magnetic tape, discs, and other electronic devices. A TM normally includes operational and maintenance instructions, parts lists or parts breakdown, and related technical information or procedures exclusive of administrative procedures. Technical Orders (TOs) that meet the criteria of this definition may also be classified as TMs.

Testbed. A system representation consisting partially of actual hardware and/or software and partially of computer models or prototype hardware and/or software.

Transportability. The capability of materiel to be moved by towing, self–propulsion, or carrier through any means, such as railways, highways, waterways, pipelines, oceans, and airways. (Full consideration of available and projected transportation assets, mobility plans and schedules, and the impact of system equipment and support items on the strategic mobility of operating military forces is required to achieve this capability.)

Vulnerability. The characteristics of a system that cause it to suffer a definite degradation (loss or reduction of capability to perform the designated mission) as a result of having been subjected to a certain (defined) level of effects in an unnatural (man–made) hostile environment. Vulnerability is considered a subset of survivability.

Weapon System. Items that can be used directly by the armed forces to carry out combat missions and that cost more than $100,000 or for which the eventual total procurement cost is more than $10,000,000. This term does not include commercial items sold in substantial quantities to the general public. (See Title 10, United States Code, Section 2403, "Major Weapon Systems: Contractor Guarantees").